

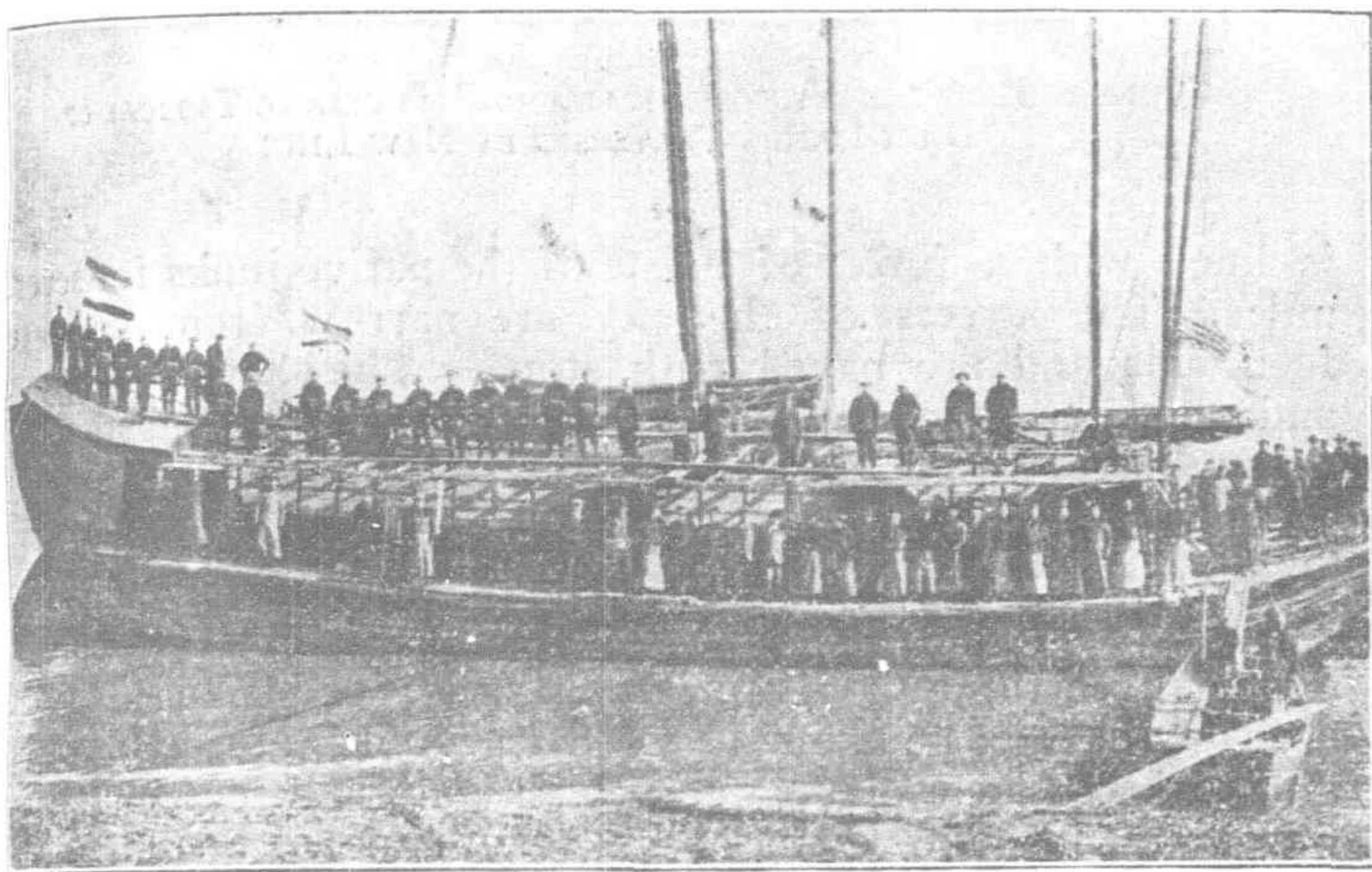
THE FAR EASTERN REVIEW

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SIEMS-CAREY ENGINEERING PARTIES ON HOUSEBOATS READY TO START ON THE YANGTZEKIANG. CHINESE GUARD IS IN UNIFORM



THE BEGINNING OF THE SURVEY OF THE CHUCHOW-CHINCHOW LINE BY THE AMERICANS. X—MR. SULLIVAN IN CHARGE OF THE PARTY

RECONNOITERING THE NEW AMERICAN RAILWAY ROUTES

Projected Line to Paoking Traverses Rich Country

Engineers are now engaged making a reconnaissance of the railway lines recently awarded to the Siems-Carey Railway and Canal Company for construction. Parties are out on different sections and their complete reports are expected within a month or two. Already some are in and we are able in this issue to summarise in particular the interesting report made by Mr. Murray Sullivan, the engineer in charge of the section of the Chuchow-Chinchow line between the vicinity of Chuchow and the city of Paoking, in Hunan Province, a stretch of some 137 miles. If the road to Paoking is built it will be the northern section of the projected railway through Kwangsi Province, the line against which the French Minister has now seen fit to enter a protest—a matter which formed the subject of comment in last issue.

Mr. Sullivan and party began work in January and soon discovered that a connexion with the Canton-Hankow railway at Chuchow would be difficult and expensive on account of the rough, broken country to the west and north, the mountains rising abruptly 300 to 1000 feet above the general level of the country. The logical line, according to Mr. Sullivan, appears to be from the small station of Ichiwan, some twelve miles northwest of Chuchow, to Siangtan, and thence to Paoking. With the exception of about two miles of fairly heavy work in the rough, broken country where the line will descend through the hills, the grading should be fairly light. The only important bridge will be the crossing of the Siang river at Siangtan, just

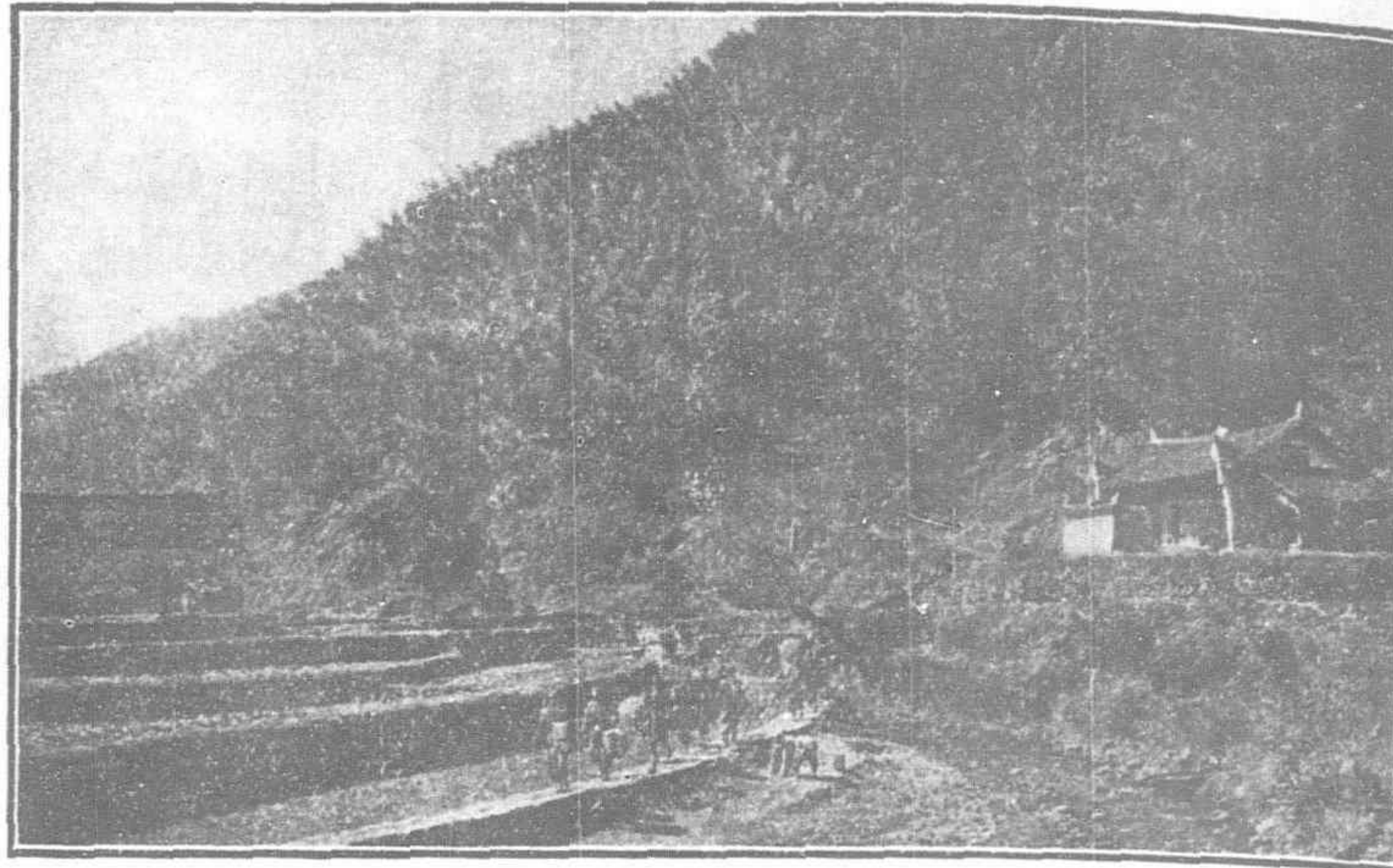
south of the city, where the narrowest point of the river is some 1586 feet. During the great flood of 1906, the greatest in the memory of "the oldest inhabitant," the water in the Siang rose 40 ft. 4 in. above its mean low water level.

In general the country traversed between Ichiwan and Siangtan, and about ten miles westwards of that city, is rolling, with many low hills and little valleys. West of Siangtan a great valley or plain spreads out for more than ten miles, rimmed by hills on the north and west and by the Siang and Lien rivers on the south and east. All of this country is well watered and almost all of it is under cultivation. It is all thickly settled. The little farm houses, usually built of mud brick with thatched roofs, sometimes tile, are usually set in a small grove of bamboo and camphor trees, with palms and other semi-tropical plants growing in front. Everywhere there are gardens and vegetables. Temples, large and small, old and new, dot the country. Little villages are found all along the route varying in size from a few families to several hundred. The people impressed Mr. Sullivan as being uniformly polite and very willing to give any information or render any service they could, which indicates an encouraging change of conditions from a few years ago when the natives were in such superstitious dread of railways and all that pertained to them.

Ichiwan is a small town of some 1500 people, surrounded by country producing rice, tobacco and barley. Wine is produced from barley and is shipped out in large quantities.



MR. SULLIVAN'S PARTY CROSSING THE WAIFOCHIAO BRIDGE. THIS SHOWS THE METHOD OF TRANSPORT USED ON LAND THROUGHOUT THE JOURNEY



COUNTRY BETWEEN YANGCHAITAI AND SIANGSIANG TYPICAL OF RICH LANDS TRAVERSED BY NEW LINE

There are ten brick and tile kilns at the place and pottery is made there. Hogs are raised and exported in considerable numbers. The total principal exports amount to about \$390,000, while the imports are valued at \$220,000.

Chuchow has a population of about 3,000 people engaged principally in the raising of rice, barley and tobacco, and in cutting and shipping wood from the adjoining districts. It is the junction of the Canton-Hankow railroad and the Chuping railway, the coal road which runs east to the Pinghsiang mines, a distance of 60 miles. The country around Chuchow for the most part is rough and mountainous with small valleys between the high hills. Chuchow is of no commercial importance. The climate is said to be mild all the year round, and the soil productive, though not particularly fertile. Large quantities of fertilizer are brought in, being for the most part cakes of tea wood seed. All vegetation seems to thrive, no doubt aided by the moisture in the air and the rainy season of about four months, and particularly noticeable is the plant life of more tropical parts such as bamboo, palms, ferns, etc. Rice is the one great crop. There are practically no silver or copper coins in circulation, the currency being paper, which is greatly depreciated, 2200 cash being equal to one Mexican dollar. There are no horses and no mules, the sedan chair being the chief means of transportation.

Siangtan is situated on the west bank of the Siang river, 31 miles south of Changsha. It is a large city of considerable commercial importance. Like most of the important cities of China it is walled, but the city which has grown up outside the walls is greater than that within. Siangtan spreads out over five miles of river front and has a population of from 130,000 to 200,000. The Siangtan district, comprising the country contiguous and tributary to Siangtan is very densely populated. The Magistrate states that there are 1,300,000 living in it. The principal products are rice, tobacco, barley, vegetables, also brick, tile and pottery. The principal imports are salt, sugar, piece goods, satins, petroleum, and medicines, there being a great business in the latter. The total export and import business is estimated by the Magistrate at over \$100,000,000. The greater part of the business is with Changsha, but Siangtan is also the receiving and distributing point for a large territory to the west and south.

For many years Siangtan is said to have been a great trade centre. According to the letters of Baron Richthofen, written in 1870-72, at the time of his journey through the province, Siangtan was then the largest city in Hunan and was considered "one of the chief commercial places in China." In later years, however, with the building of the railroad to Changsha and the opening of other routes Changsha forged ahead and is now considerably larger than Siangtan. Siangtan remains, however, a logical trade centre, commanding the great basin of the Siang river and the Lien river. The trade routes from the west and south meet at Siangtan. It is also head of navigation for the large steamers during high water. Its river front

is lined with a forest of masts of the native junks for several miles. The streets of the city are narrow, from six to ten feet wide, and are paved with stone. The shops are big ones and altogether the city bears the stamp of being substantial in every sense.

Leaving Siangtan (150 ft.), the road goes across a great plain or level valley, densely populated and all under cultivation. Little villages exist all along the route. The work would be light—all earth, although near Siangtan embankments would probably have to be about 12 to 18 feet in height for about one mile to keep the line up out of high water. Proceeding northwards the village of Kiangsar (180 ft.) situated on a low bluff on the Lien River is reached. The water was very low and only small boats drawing one to two feet of water could navigate the river. The population of Kiangsar is from 3,000 to 4,000.

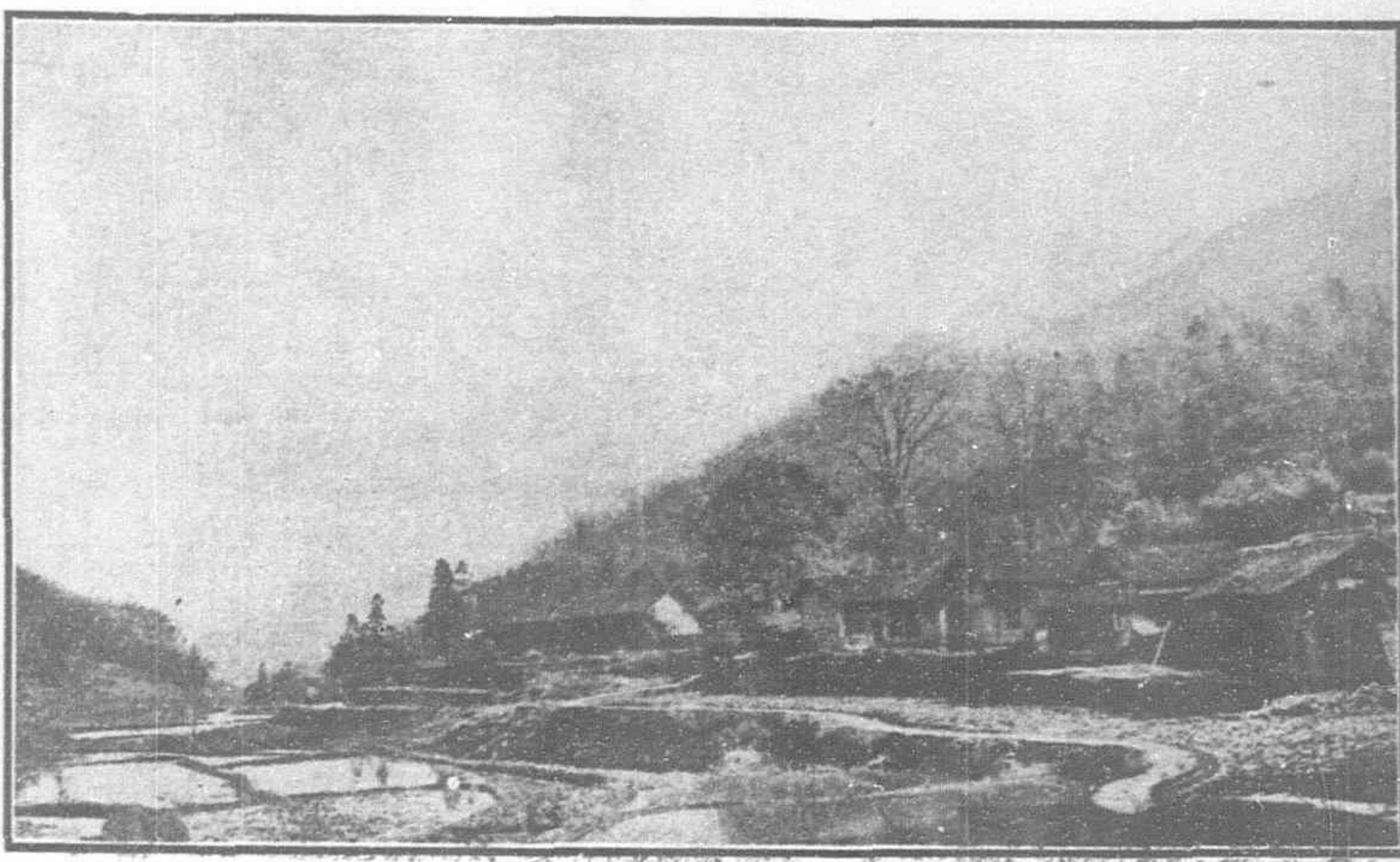
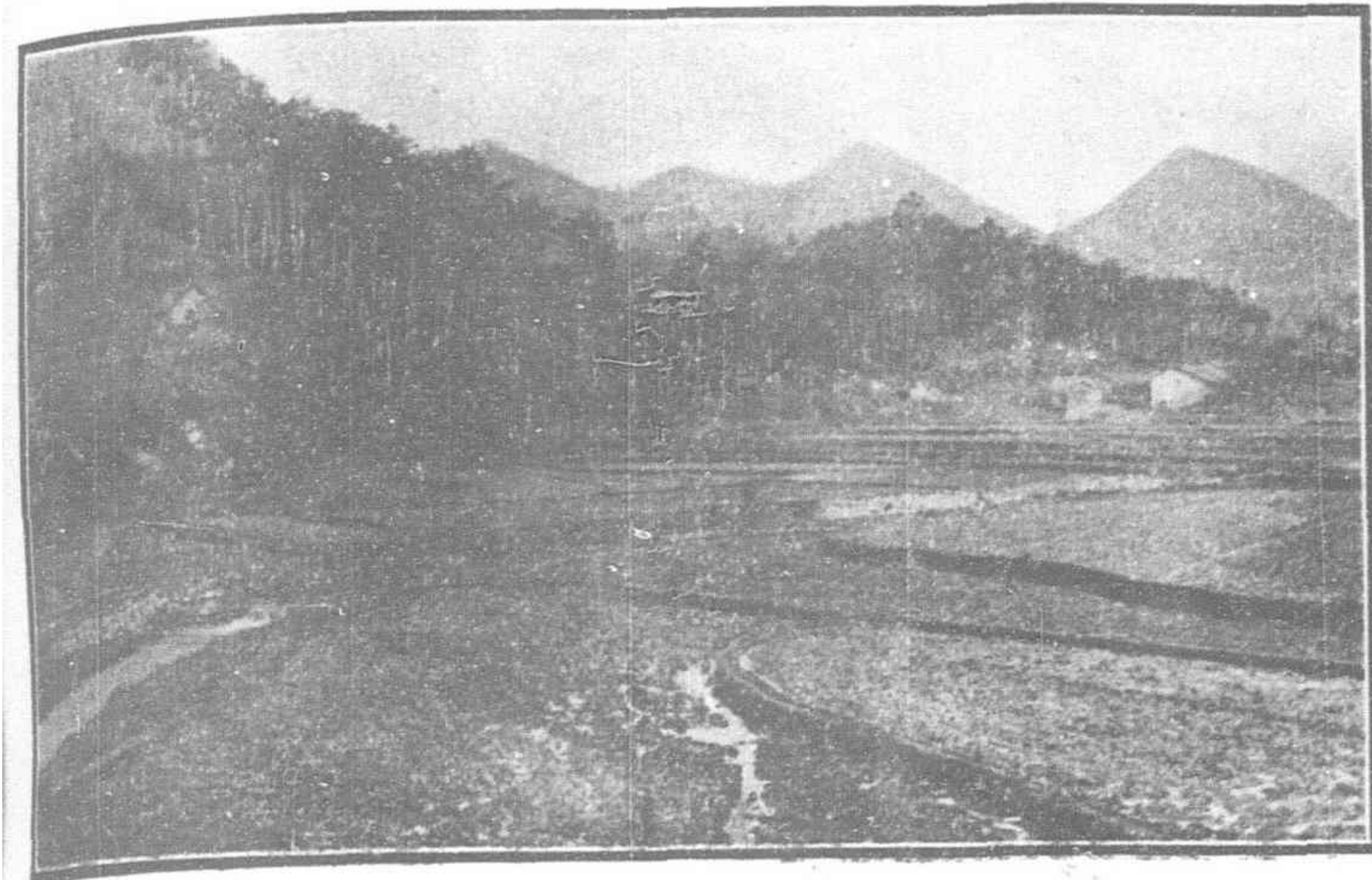
From Kiangsar to Chilipu the road gradually rises through low hills, passing over a small summit (200 ft.) and descending to the same elevation at Chilipu. The country is rolling and all is under cultivation.

The trail crosses the Yuenhu—a small tributary of the Lien River (which during high water backs up water and forms a lake near the village)—over a stone arch bridge, built 500 years ago, during the Ming Dynasty. The bridge is constructed of fine granite, and is of triple arch design. It is 220 feet long, 25.5 feet wide and 39 feet high. It was rebuilt 60 years ago. A marble tablet at one end of the bridge commemorates the building of the structure and its subsequent repairs. The granite came from Tingtzewan, a small town on the Siang River, 13 miles north of Changsha, where granite is still being hewn for various purposes. The stone is of exceptionally good quality.

Continuing South the country is flat and all in rice, to Singfutze (185 ft.). Rice is the principal product all through this section of country. The work all through would be fairly light, and practically all earth.

From Singipu, the general course is south-west, and a line would keep back about one-third of a mile from the river, and avoid the large gulches and ravines. The country is generally flat. A pagoda on a high mountain on the opposite side of the Lien River from Siangsiang can be seen in the distance shortly after leaving Singipu.

Continuing almost due west, Tungchienwan, a large village of 700 people, situated on the north bank of the Lien River, is reached; the village is located on a low bluff. There is a considerable fall in the river along here. Its width is about 500 feet, the distance from bank to bank being about 800 feet. Tungchienwan is located in a small basin, low hills extending around from the north-west to the south with the Lien River on the east. From Tungchienwan the course would be south-west and a line would pass around the foot of a high hill on the right, out into the great valley, or plain, in which Siangsiang is situated. The country is nearly flat, rising slightly to the west. Rice is



BETWEEN YANGCHAITAI AND SIANGSIANG, SHOWING RICE FIELDS

raised extensively all through this great valley, all of which is in a high state of cultivation. The country is densely populated.

The City of Siangsiang

Siangsiang, the district city of Siangsiang District, is situated on the north bank of the Lien River, 30 miles west of Siangtan, and is a city of considerable commercial importance. The city proper has a population of about 68,000 while the District claims a total population of 1,181,000.

Siangsiang is located in the center of an immense valley practically all of which is used for the cultivation of rice. It is also a great trading point, as the two main trade routes from the west and southwest join at Siangsiang and become one route east to Siangtan. Furthermore the smaller boats ply as far up the Lien River as Siangsiang nearly all the year, and considerable quantities of exports of various kinds are transported by coolies to Siangsiang where they are transferred to the boats and sent on down the river; other stuff being carried on through by coolies to Siangtan. Siangsiang is the general distributing as well as receiving point for the Siangsiang District, and by reason of its favorable location, enjoys a large trade. The principal exports per annum, according to the Chamber of Commerce of Siangsiang, are valued at \$269,000, and comprise matting grass, 1330 tons; turnips, 7560 tons; and hogs, 10,000 head, all of which is at present shipped by boats to Siangtan. The imports total in value \$1,031,000 and include indigo, 390,000 lbs; tobacco, valued at \$130,000; cotton, 2,000 bags; muslin, 1000 bundles, each 426 lbs.; salt, 16,000 bags each 133 lbs.; petroleum, 15,000 cases; foreign goods, silks, satins, piece goods, etc. valued at \$200,000; medicines, valued at \$100,000, and sundries valued at \$150,000. These imports are shipped from Siangtan and Changsha, about one half from each place.

The Lien River

The Lien river is one of the principal tributaries of the Siang River. It rises near the Sungshan mountain, 30 miles northeast of Paoking, and flows in an easterly direction, emptying into the Siang River about three miles west of Siangtan. The Lien is navigable by small craft as far up as Yangchaitai, during the high water stage; but on account of the rapids and shoals at many places in the stream, navigation is difficult and dangerous. During low water about four to six months each year all transportation on the stream is suspended and carrying coolies transport the stuff into and out of the country.

Continuing south-west along the valley of the Lien River, the country remains practically level, with very low hills. All is under cultivation. Southwesterly along the low hills, the trail passes through the hills over a little summit to the big stone arch bridge spanning the Lien River at Chuchingtu. This bridge is called Waifochiao. It was built 260 years ago, in the Ching Dynasty, and is an excellent example of stone work. It is of the usual arch design—there being nine arches, each having a

span of about 45 feet. The length of the bridge is 626 feet, the width 27 feet, and the height 58 feet.

The type of arch is very similar to the old Roman arch and is exceptionally well built.

The arches root on large piers of granite, which have cutwaters on both upstream and downstream sides. Massive abutments support each end of the bridge. The entire structure is of cut stone—a granite of very fine quality.

The granite is said to have come from Shiehchaitu, a point 10 miles north of Tansze, or 40 miles by waterway northwest from the bridge site, the stone having been transported by small boats down a little tributary of the Lien River to Tansze and thence down the Lien to the bridge's site. This information is furnished by some of the old inhabitants living in the small village of Chuchingtu at the west end of the bridge. However, it appears from the great similarity of this granite to that which comes from Tingszewan on the Siang River 1.3 miles north of Changsha where granite of a very fine grade has been hewn for over 300 years, that the granite for this bridge may have really come from Tingszewan.

According to the marble tablet at the north end of the bridge (from which most of this information has been obtained), during the 24th year of Tao Kuang—about 60 years ago—this bridge was partially washed out by flood, and was repaired two years later. During the 13th year of Kuang Hsu—about 30 years ago—this bridge was again damaged by flood, and was again repaired during the same year. In the 3rd year of the Republic of China (1914) some slight repairs were made to the bridge, caused by the flood of the previous year. The bridge to-day appears to be in good condition.

A line would pass on the east side of the hills, or low mountains, in approaching the crossing of the river and would probably cross about 1,200 feet below, or east of, the bridge above mentioned. The railway bridge would be about 650 feet in length and should be about four feet higher than the stone bridge—that is, about 62 feet high. The river banks here are about 30 feet above present low water.

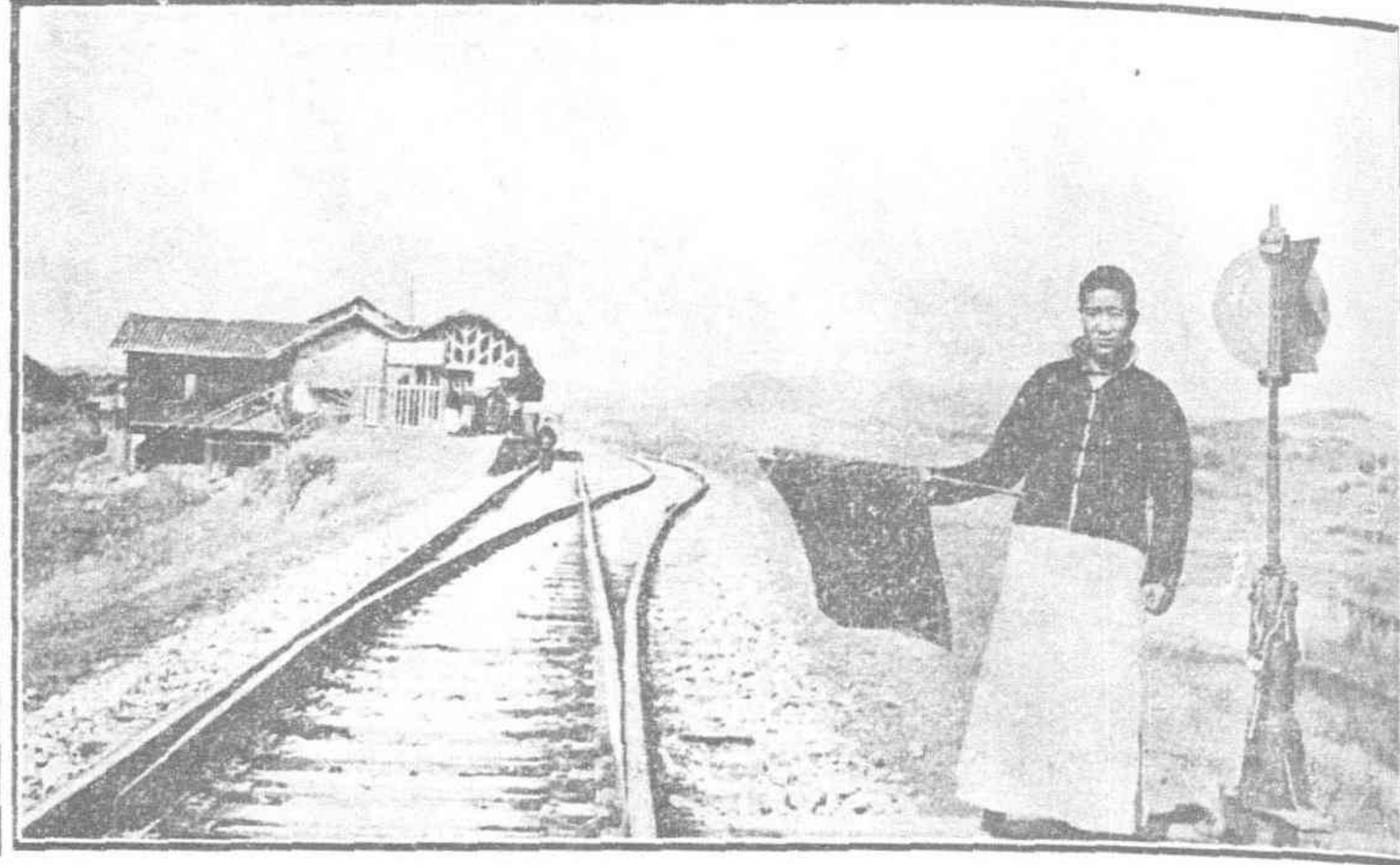
Continuing south-west, the valley spreads out on the north. There are large rice fields for one to two miles.

At Waikuaiteing, a village of 25 families, 150 people (360 ft), the entire town is engaged in making umbrellas of bamboo and oiled paper. Southwesterly for about 3 miles the line would pass through hilly country—there being hills of every description, high and low, steep and flat, big and little,—the country being cut up with many ravines and gulches.

Yutong is a small town situated on the northeast side of the valley through which the Yutongho, a tributary of the Lien River, flows. On the opposite side of the valley from Yutong is the village of Yangchaichi. Leaving Yutong the trail crosses the Yutong over a granite bridge 125 feet long, with limestone piers. The roadway of this bridge is composed of granite stringers 16 feet long, 9 inches thick, and 14 inches wide. The central spans



COUNTRY GENTLEMAN'S HOME NEAR SIANGTAN. THE CIRCLE IN THE FOREGROUND REPRESENTS A SMALL PORTION OF FIELD RESERVED FOR SEED DEVELOPMENT



CANTON-HANKOW RAILWAY STATION AT ICHAIWAN, A FEW MILES FROM CHUCHOW, WHICH IT IS PROPOSED TO MAKE THE JUNCTION FOR THE AMERICAN LINE

of the bridge have granite stringers as long as 28 feet and 10 inches thick, and 14 inches wide. The width of the bridge is about 6 feet, a stone railing being built on each side. The trail follows a narrow valley about 1,000 feet to 1,500 feet in width, in which rice is raised in considerable quantities to Wulipai (380 ft.) a small village of 12 families, where the valley turns to the west. There are steep slopes on both sides with small pines growing on the side hills. For five miles the route passes through narrow valleys, gulches, and ravines, in rough, hilly country. No serious obstacles exist however. The general character of the country for a further five miles is very hilly, and a short tunnel about 400 feet long might be found advisable here; although there is a possibility of getting a line through to the east which would be shorter. The hills vary in height from 75 feet to 300 feet, the rock being limestone, from which lime of good quality is produced.

Chiehbuton (410 ft.), a village of 600 people, is located one mile from the Yungfeng River and about two miles southeast from Takiangkou, the junction of the Lien River and the Yungfeng River. The Yungfeng River makes a big bend at this point, its general course in the direction of Yungfeng being south, 80 degrees west. It is a stream 250 feet wide, with banks 20 feet above present low water.

Paper from Bamboo

Chiehbuton is a town of more importance than the average village passed; for considerable quantities of bamboo paper are manufactured in this vicinity, amounting to about an average of 665,000 pounds each year (the bamboo being cut every other year). This paper goes by boat to Siangtan. Lime of good quality is burned in four kilns near the town and is used in the manufacture of bamboo paper and as fertilizer. It sells for 13.5 cents Mex. per 100 lbs. Most of the lime produced is used locally though a small amount goes to Siangsiang. Considerable quantities of rice are raised in the locality.

Continuing south-west, there is a range of mountains on the east about one mile distant which vary from 700 feet to 1,300 feet in height, while on the west is the Yungfeng River about 300 feet distant. Further to the west there are low hills about 200 feet in height. The entire country is very hilly and rough. The soil is a brown loam and clay, while the hills are clay and limestone. Bambooware is made in the small villages. The country continues to rise steadily to the south, there being a rise of 25 feet in 3,600 feet. Limestone is quarried from a big ledge 150 feet from the river.

The country continues rugged—broken up with many low hills and ravines and small drainages. Hills are 100 feet to 500 feet in height. Rice and vegetables are the principal products. Coal outcroppings appear on the mountains all around in this vicinity, but no development work has been done to determine extent or quality. There is an old coal mine, not operated now, one mile south of Chihshipu, but it does not amount to much. Numerous holes are dug in the mountain sides for coal all

around the locality. There is also a big limestone quarry, two large veins of limestone, each about 20 feet thick, having been opened up.

The lime is used quite extensively as fertilizer. A mile or so further on the country flattens out somewhat, there being low red clay hills and many little valleys, with a small growth of pines on the hills. A stone bridge, 65 feet in length, of 2 arches, 20 feet in height, and 12 feet in width is crossed, and the route then traverses rice fields to the small village of Tunglinpu (430 ft.). The country is thickly settled.

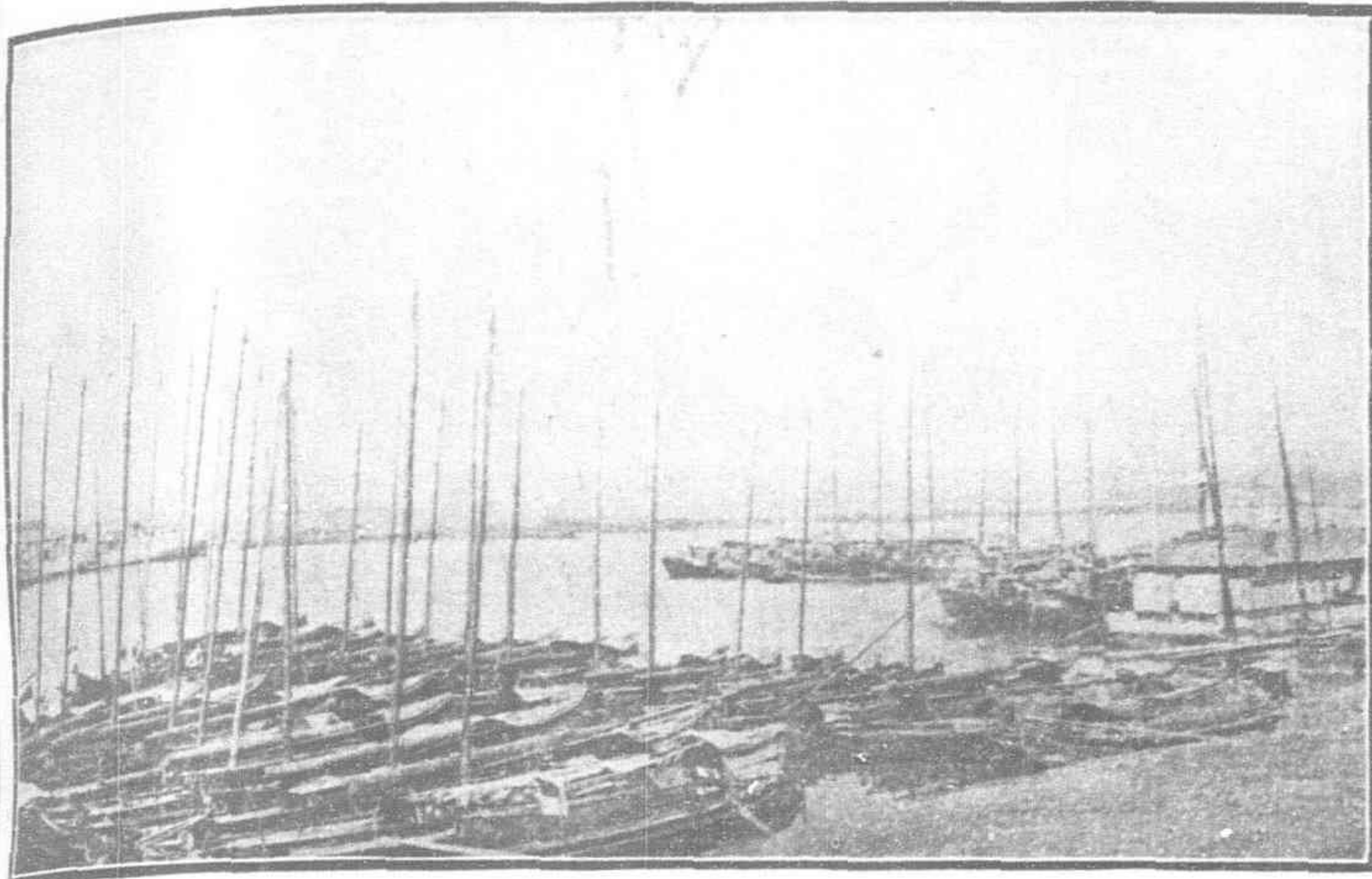
The trail crosses the Yungfeng River at Yungfeng (495 ft.) over a stone arch bridge about 175 feet long, 25 feet wide, and 25 feet high. This bridge is of limestone, and of the usual arch design, there being five arches of 35 feet span each. Yungfeng is an important town of 10,000 population on the trade route to Paoking, situated 63 miles southwest of Siangtan, and 62 miles northeast of Paoking. Yungfeng is located on the Yungfeng River, a large tributary of the Lien River, in the midst of a large valley. There are about 400 shops in the town, which is located on both sides of the river and is connected by a bridge 175 feet long, 25 feet wide and 25 feet high, having 5 stone arches of 35 feet span each. The country is well settled all around, and is very productive, the principal products being tea, rice, paper, and cotton cloth, which is woven in large quantities. The town is the head of navigation on the Yungfeng River for small craft which carry the exports down to Siangsiang and Siangtan, first by the Yungfeng River, then down the Lien River and then by the Siang River.

On all sides of the valley the country is rolling, the hills being mostly decomposed red sandstone and clay, while the valleys are loam. The tea is raised principally on the hills of decomposed red sandstone, and is said to be a very good grade of red tea, or black tea, as we usually call it.

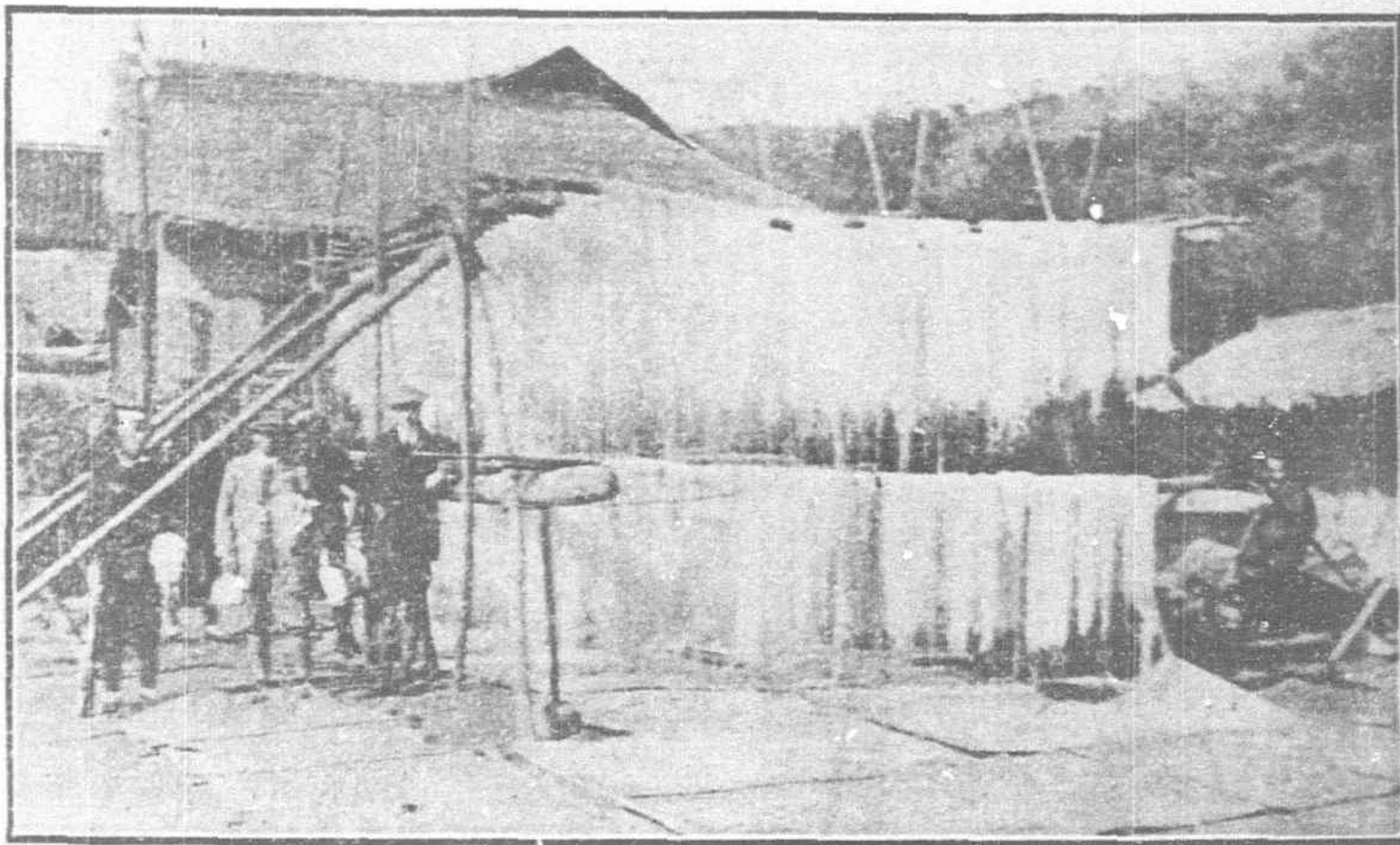
The principal exports are valued at \$255,300 and comprise red tea, 5,000 cases, 65 lbs.; bamboo paper, 10,000 bundles, 42 lbs.; cotton cloth, 300,000 pieces, 10 yds. each. The cotton cloth is woven from cotton imported from outside points, coming principally from Hankow. The chief imports are valued at \$1,812,000, and include cotton, 40,000 bags, each 65 lbs.; salt 40,000 bags, each 133 lbs.; muslin, 4,000 bundles, each 450 lbs.; medicine, \$300,000; satin, damask, silk and piece goods, \$20,000, and flour, sugar and sundries, \$500,000.

In addition to the above exports, various exports from Paoking are sent overland by coolies and are loaded on the small boats at Yungfeng, when the water is high, whence they go down the river to Siangtan. Such exports comprise iron, indigo, hides, etc.

The Yungfeng River rises in March and April and begins to fall in August and September. It is navigable by the small craft about six or seven months of the year.



JUNKS AT CHANGSHA ON THE SIANG RIVER. THESE ARE SMALL BOATS WHICH CARRY TRAFFIC UP-RIVER



VERMICELLI MAKING AT YUNGFENG

Tea Plantations and Coal

The route continues south-west, across the valley of the Yungfeng, which is all in rice, and skirts low hills of red clay. The river covers the fields about two feet during high water. For the next seven miles the line would pass through a rolling country, of low red hills and little valleys. These red hills are of decomposed sandstone, on which is grown the tea shrub. There are extensive tea plantations in the locality. The country through this section is beautiful.

The Shangszechiao coal mine is situated about eight miles to the south-west. The road passes several small villages and runs through a little more hilly country. Near Yanghuchin, (650 ft.), the country rises about 70 feet in 5400 feet, the large mountain, of Tsai Tse Shan, being to the west.

There are low, flat hills and many little valleys, and the line would continue through rolling country passing several villages to the town of Chingsuping (700 ft.), 78 miles west of Siangtan and 15 miles south-west of Yungfeng. This is one of the more important towns on the route. Coal outcroppings appear at many places near this point. Coal is now being mined at the Changchaichung mine, 2 miles north-west from Chingsuping, which produces about 667 tons of coal per month working full handed 200 men, but now only 50 men are working. There are also mines 1.3 miles to the north-east not in operation at present.

Chingsuping is a busy town; large quantities of cotton cloth are woven and considerable quantities of tea are raised and shipped out. The coal from the nearby mines also passes through the town.

The principal exports are cotton cloth, 700,000 pieces, each piece 10 yards, valued at \$420,000, and red tea, 1,000 cases, each 65 lbs., valued at \$13,000. The cotton cloth is carried by coolies to Paoking, Ningsiang and Aganhua; also to Yungfeng where it is loaded on small boats and sent down river to Siangsiang and Siangtan. Red tea is carried by coolies to Yungfeng and then by boat to Siangtan.

The imports are cotton, 5,000 bags each 65 lbs. valued at \$65,000; muslin, 500 parcels, each 480 lbs. valued at \$75,000; medicine, \$50,000; flour, sugar and sundries, \$50,000; foreign goods, piece goods, etc., \$30,000; salt, 8,000 sacks 133 lbs. each, \$98,000. Two-thirds of the salt comes from Hangyang and Hunglomiao, the other one-third coming from Siangtan.

From Chingsuping, the line would continue through rolling country full of low hills and little valleys, to Kailing, through fields of rice and wheat. The valley is thickly settled, Taitze-shang, a small village, is noted for a very large camphor tree said to be over 1,000 years old growing on the east side of the main trail, the tree being walled up around the base with stone.

Kailing (620 ft.) is a town of 1000 people. The hills round about are 50 feet to 200 feet high, and thence the route passes through some rough broken country until Shihchaiwan (630 ft.) is reached. This is a small village situated in the midst of limestone hills.

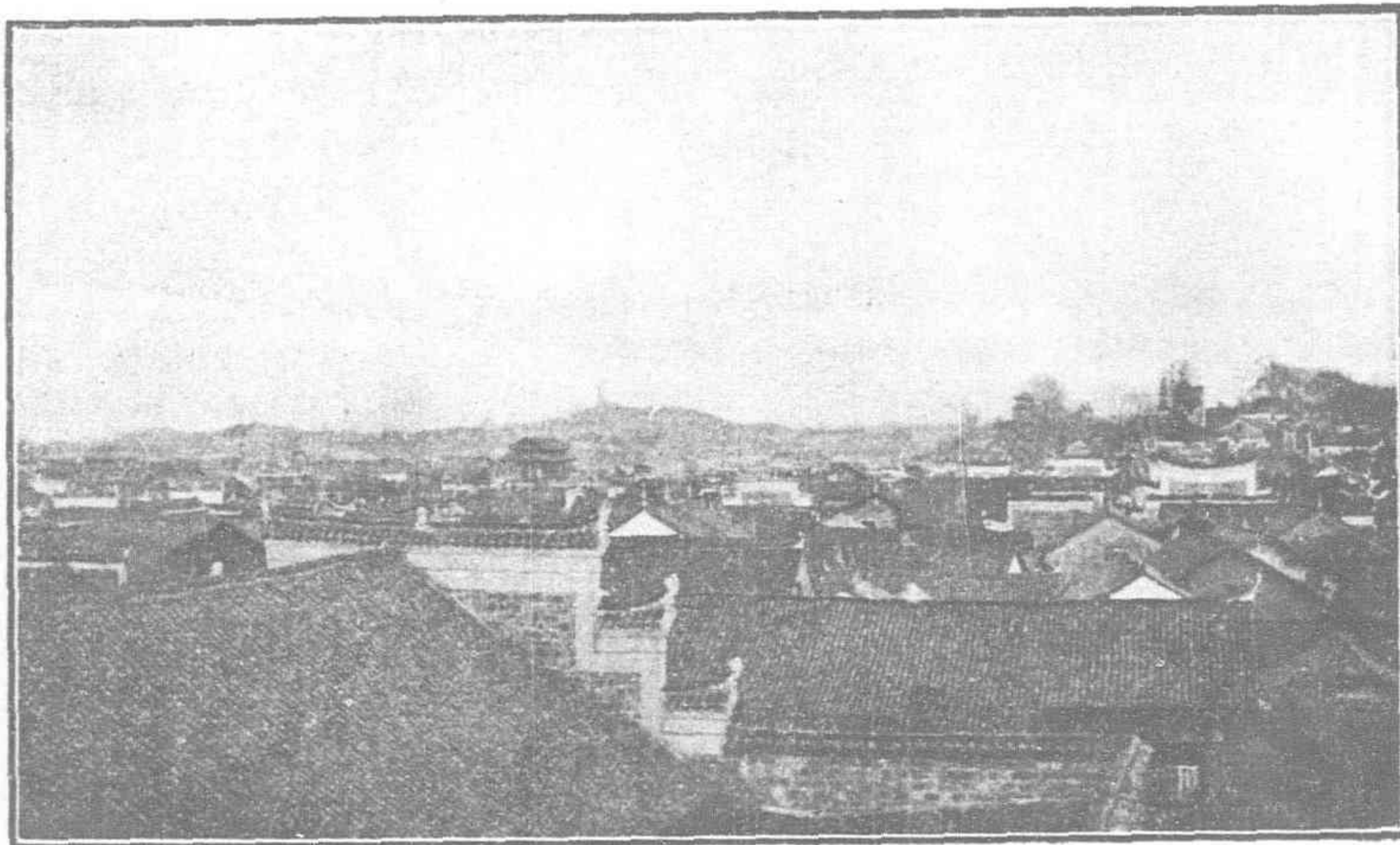
A deep valley, with hills on either side varying from 250 feet to 1000 feet in height is then traversed. Coal diggings are numerous. The Yuchaichung coal mine is located about one-third of a mile south-east of the trail. This is a rather rough section of country, and the road continues through hills steadily ascending, to Kingszepu (900 ft.). The Yinyeling iron mines, and furnace, are located one-third of a mile south-east of this place. The country grows more rugged and broken, less settled and wilder as the road goes on. The principal products in this section are rice, wheat, and potatoes, but only a small amount is raised and all is consumed locally. Here the country flattens out somewhat; the hills are not so high or rugged. The road continues to ascend the divide to the village of Yaofungling registering 1300 feet. If an alternate line is surveyed in addition to the trail route, to go through a pass in the hills, a considerable saving in distance may be effected and the line will come out in a large, well cultivated valley. Coal diggings are to be seen up high on the mountain to the left and coal outcroppings are observable at various points in the vicinity.

There are coal mines at Kingchaichiao two miles north-west of Chutongpu. The line passes through a valley varying in width from 600 feet to 2,000 feet, the low hills on the east side being covered with pines 20 feet to 30 feet high. There is considerable underbrush on the hills—an unusual thing in this part of Hunan. Charcoal is made from wood from the nearby hills.

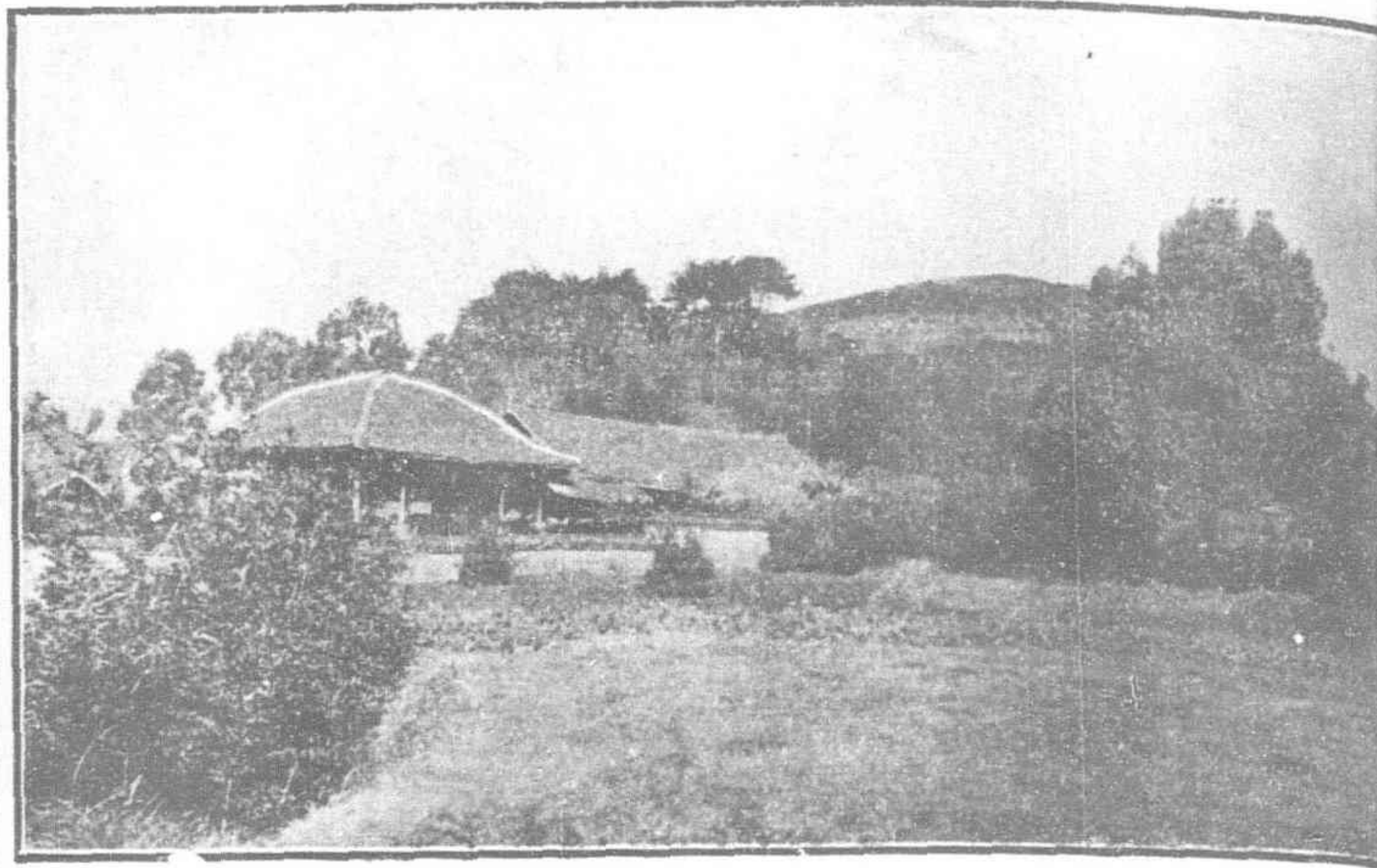
The country becomes very hilly again, there being many hills from 50 feet to 250 feet in height, on all sides with very small valleys between. There are trees on all the hills—mostly pine—and the principal products are wheat and potatoes. A mile or so further on the hills are lower and the slopes less steep, the country being rolling. Some tea and rice are raised. Near Tuanshanpa, a little village, the valley closes in around to the south and west pine-clad hills are passed. Shortly after Hsü-chai-pu (1,115 ft.), a small village, is an ancient pine tree, about 40 feet high and four feet in diameter, with a stone tablet at the base. This tree is said to be older than the Ching Dynasty—over 1,000 years old. The tablet is broken and the data obliterated. The line continues through hilly country, passing low mountains on the right with limestone outcrops, rugged and steep, about 300 feet to 500 feet high. On the left, there are low hills and cultivated country. The principal products are wheat and red peppers, while further on in addition to wheat and potatoes, a few peaches and pears are raised. The line would pass through a gap between the limestone mountains and would cross many little valleys extending in all directions. The country is very hilly. The outcrop of limestone in this section is similar to that seen in the Garden of the Gods in Colorado.

The Liuchaiwan iron mine is located four miles north-east of Hetienpu, near the small village of Shisatsing.

The country hence is rolling, and ascends toward the west, pines growing on the hills. From Matongting (1,195 ft.), the line would gradually descend through rolling, easy country, and would continue in a westerly direction across numerous small



VIEW OF PAOKING



FORMER VICEROY'S HOME NEAR PAOKING

valleys and hills, in rolling country, to Hungchiao (1,105 ft.), a town of 1,200 people. This is a large town situated on both sides of the Shaoshui River, in the midst of a large valley all in rice. The Shaoshui is a stream about 200 feet to 300 feet in width at this point, which flows south, then turns north and empties into the Tze River at Paoking.

Hungchiao is a good trading point on this route; there are coal and iron mines in this vicinity and there is also a considerable amount of good farming country tributary to the town. The principal products are tea, tobacco, and red pepper; also coal and iron.

The Shaoshui is crossed by a stone arch bridge, 225 feet long, 22 feet wide, and 30 feet high. The bridge has six arches, each of which is about 30 feet span, resting on stone piers. The bridge is covered over with a tile roof. There was no information available showing when this bridge was built, but the tablet indicates that its original name was Taifingchiao, but that during the Ming Dynasty, its name was changed to Hungchiao. The bridge is at present in a good state of repair.

The line would cross the Shaoshui a little north of or above, Hungchiao, necessitating a bridge about 220 feet long and 25 feet high, and then would have a steady descent, with the exception of crossing three small ridges. The country is very hilly and is cut up with many cross, or side, drainages. The line would pass near several villages, and near Foshingting (965 ft.) there is about one-half mile of rough, hilly country here, in getting out of valley and over into other drainage would pass small valley and hill land, producing rice, wheat and potatoes, into Paoking (955 ft.)

Paoking—An Industrial Centre

Paoking, the district city of Paoking District, is an important business center of about 125,000 population. It is a walled city located at the junction of the Shaoshui River and the Tzu River, in rough, mountainous country. Paoking is the center of a large mining district in which are found many coal and iron mines, also some antimony mines. Other minerals are also reported in this district, but coal, iron and antimony are the principal mineral products.

The iron ore mined in this vicinity is used in the numerous native foundries at Paoking in the manufacture of kettles, pots, nails, and other implements and articles of many kinds and descriptions. The coal from the mines nearby is shipped in large quantities to Hankow and other points. Timber from the mountains to the south is shipped from Paoking to Changsha, Hankow and other points. Large quantities of bamboo paper are made in this vicinity, also considerable lime is burned here, and shipped out. The shipment of hides and furs from Paoking is a big business. Tea, vegetable seeds, rice, red pepper and indigo are the principal products of the soil, all of which are exported in large shipments. There are six sugar factories at Paoking which produce considerable quantities of brown sugar from sugar-cane raised in this vicinity.

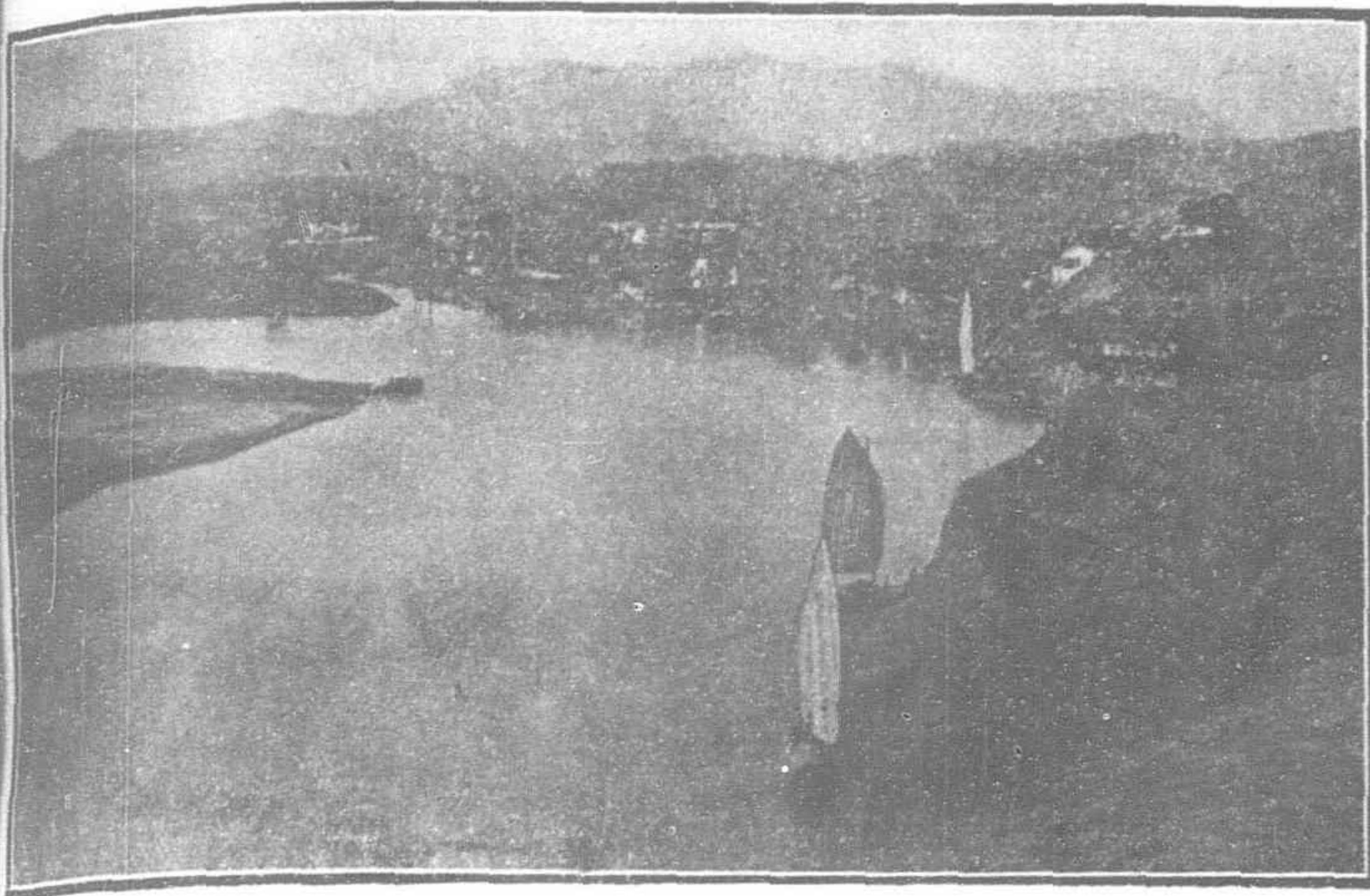
The climate is mild all the year round, except during summer months, June to August, when it is very hot. Oranges, lemons, sugar-cane and other semi-tropical fruits and plants flourish.

Notwithstanding the fact that the coal mines have no modern equipment and only the crude native methods are followed, a large tonnage of coal is produced each year. Eighteen companies are engaged in the transportation of coal alone from Paoking, and ship 160,000 tons a year to Hankow. These companies pay a total tax of 6 cents per ton to the provinces of Hunan and Hupeh on all shipments. The coal is shipped in small wooden boats, carrying 50 to 90 tons each, and it takes from one week to one month, depending on the height of the water in the river, to make the trip from Paoking to Hankow, a distance of 525 miles. During all the year the trip down the Tzu River from Paoking (the "River of Rapids," it is called) is fraught with danger, on account of the many rocky shoals and rapids. Under favorable conditions about 90% of the coal boats reach their destination, 10% of the boats being wrecked and lost, with their cargo, in making the journey. There have been seasons when as many as 40% of these boats never reached their destination, being lost in the river. As a result of this condition, these transportation companies build each year about 1000 new coal boats at Paoking which are constructed of native lumber from Sinning, and which make the journey only once down the river; if they reach Hankow, the coal is sold and the boat is knocked down and the lumber sold for what it will bring on the market. The transportation companies at Paoking have also about 300 boats of 40 to 50 tons capacity, strongly built, which can go down and come back up the river during high water, making three trips per annum. A few years ago Mr. Lien Chuan-low, head of one of the coal companies at Paoking, initiated a movement for deepening and otherwise improving the Tzu River, so as to render it safer for navigation, but sufficient funds were not raised and the undertaking was finally abandoned.

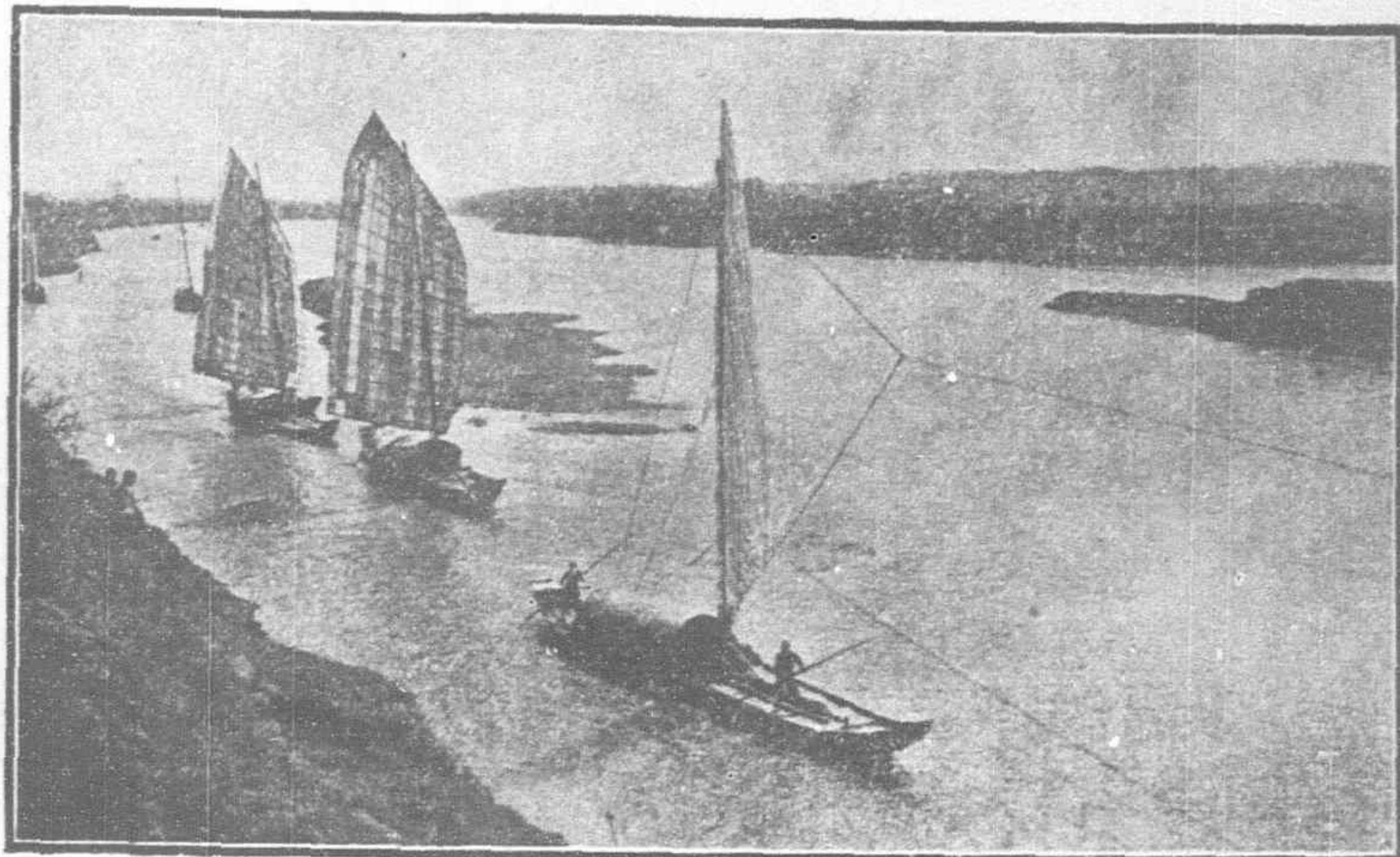
According to the statements of the Paoking coal men there has been a steady increase in price of coal at Paoking. Forty years ago, the price of coal was 75 cents Mex. per ton; twenty five years ago the price doubled to \$1.50, and about fifteen years ago it increased to \$2.25; and it has continued to increase until it now costs \$3.00 per ton at Paoking.

A Great Coal and Iron Field

The coal is said to be a good quality of bituminous coal, comparing favorably with the Pinghsiang coal. In fact, the Paoking coal usually brings a better price on the Hankow market than the Pinghsiang coal, selling for \$9.80 Mex. as against \$7.00 Mex. for Pinghsiang coal. However, last winter there was a shortage of coal at Hankow and the price of Paoking coal rose at one time to \$16.80 Mex. per ton. About 10 per cent of the Paoking coal sold on the Hankow market comes from the Nieu-masze coal mines, which are described in a separate paragraph below.



LIEN RIVER AT TANSI



TYPICAL VIEW ON THE LIEN RIVER. NOTE THE METHOD OF ATTACHING THE TRACKING ROPE

The country east of Paoking and south-east of Hungchiao, is full of coal, outcroppings being visible at many points, and many small mines are now in operation. It is said that at a place called Lutzewha two miles south of Hungchiao and east of Shaoshui River, there was a big mine 20 years ago. A shaft was sunk 400 feet in depth and an excellent coal bed was encountered. The coal seam was 27 feet thick. This mine was operated 10 years when it was accidentally set on fire, and all shafts were closed in an effort to extinguish the flames. After a year had passed the shafts were opened again and it was found that the mine was still burning. The shafts were again closed and the mine abandoned.

The iron mines of this district are usually found in proximity to the coal deposits. They are located at various points from five miles to 20 miles east and north-east of Paoking. The ore is said to bear a very good grade of iron, and judging from the tensile strength of the thin castings made at Paoking this would appear to be true, in some degree at least. The total output of the four iron mines, which are described later on, amounts to about 1,560 tons per annum or 130 tons per month.

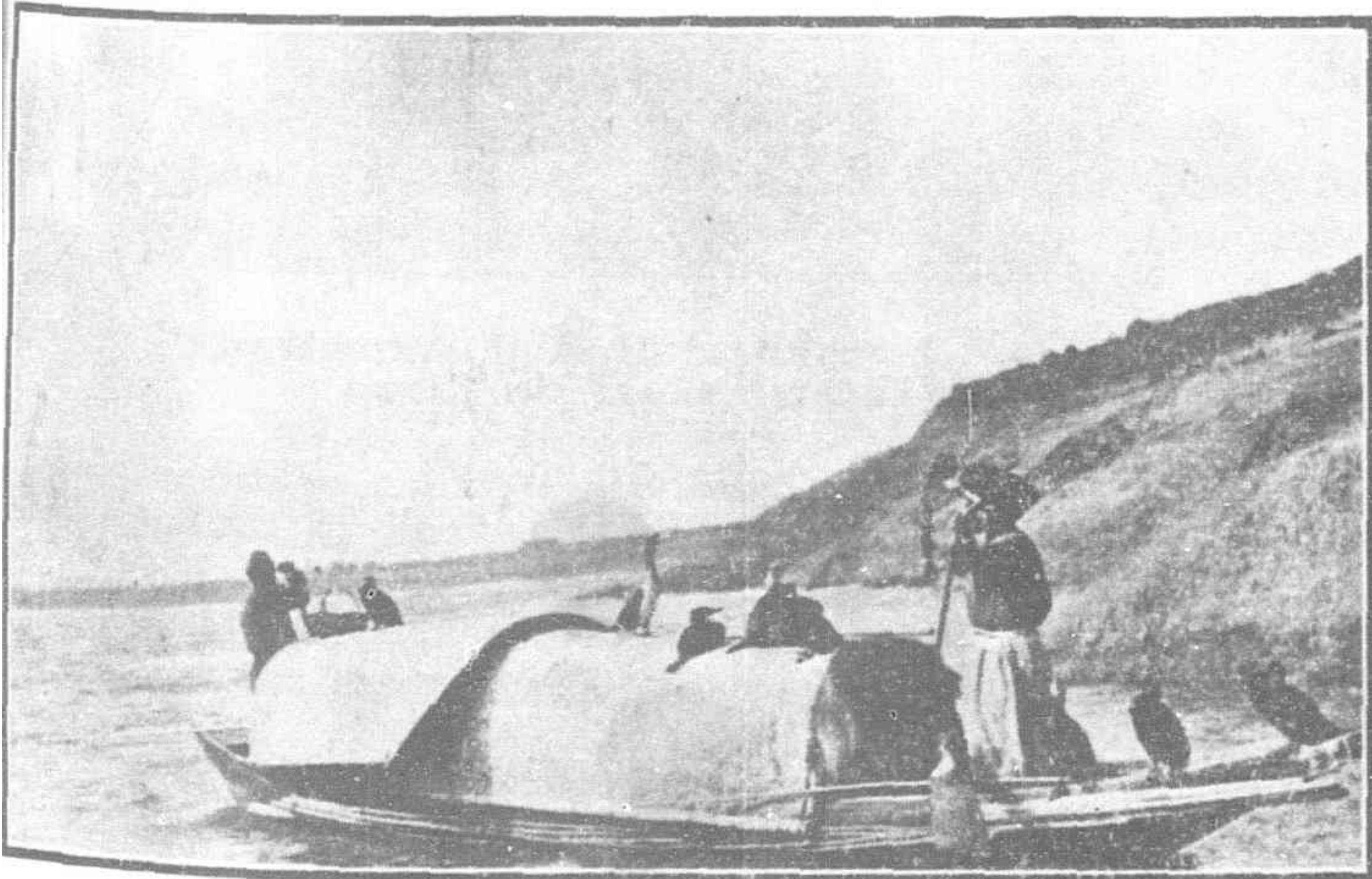
A large part of this iron is manufactured into various articles and implements at Paoking and the product shipped out to Hankow, Changsha and Siangtan. There is, however, a considerable amount of pig iron going out both by coolie carrier and by junk from Paoking. It should be remembered that most of this iron, as well as the coal above referred to, comes from near the surface and no scientific methods have been followed in the mining of either the coal or iron. No doubt better coal and iron ore would be obtained at greater depths, although it is claimed that both the coal and iron now mined are of good quality. The coal people at Paoking state that if a railroad were built into this section of the country the coal and iron mines would undoubtedly be opened up on a large scale as soon as transportation facilities for the product were available.

Antimony Deposits

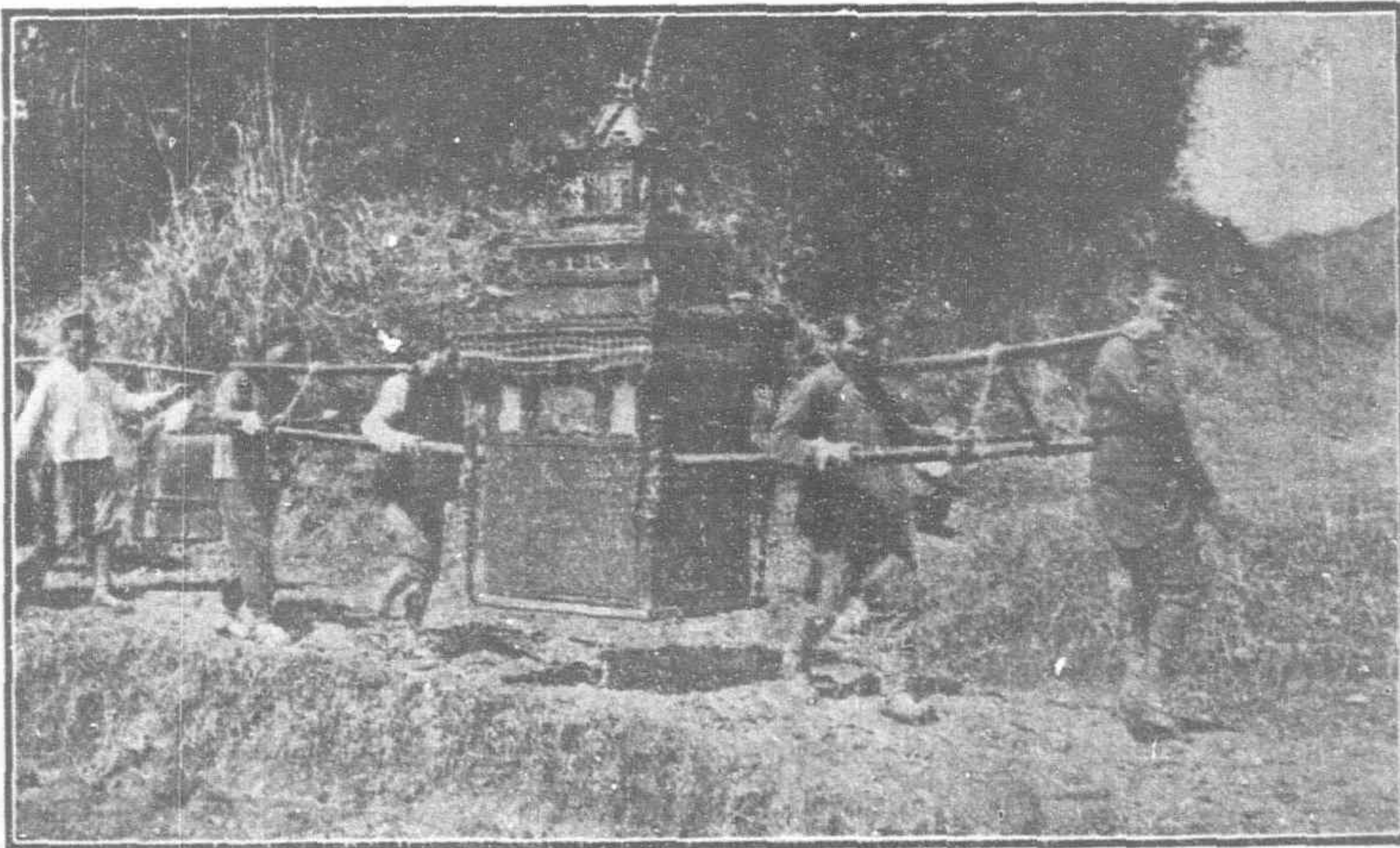
The antimony mines are located about 15 to 20 miles north-east and north-west of Paoking, Sinhua being the principal shipping point for the mines to the west of the Tzu River, and Yangchaitai being the principal shipping point for the mines north-east of Paoking. No exact figures for total output of the antimony mines were obtainable, but it was stated that considerable tonnage could be expected from this source; as the shipment from Sinhua, during low water, for about six months, would undoubtedly go by rail from Paoking; and the Yangchaitai shipments would probably go by small boats to the nearest point on the proposed railroad, between Yungfeng and Siangsiang, and would there be transferred to the railroad. The antimony shipments all go to Changsha, which is the big center for this metal and from there it is shipped to all parts of the world.

In addition to the minerals above mentioned, the following are the principal annual exports from Paoking:

Tea, 133 tons shipped by boat to Hankow, red pepper, 6,650 tons, carried by coolie to Yungfeng, 62 miles, and thence by boat to Siangtan, 63 miles; hides, 665 tons, of which one-third of this amount is carried by coolies to Siangtan, the remainder being shipped by boat to Changsha, 260 miles; indigo, 1,990 tons; about 60% shipped by boat to Hankow and 40% to Changsha, vegetable seed, 2,000 tons seed cakes, after oil is pressed out, shipped as fertilizer to Changsha, the vegetable oil going to Sinhua; nails, 6,650 tons shipped by boat to Hankow; iron kettles, 660 tons, shipped by coolies and by boat to Kweilin principally; bamboo paper, 120,000 bundles, weighing 3,900 tons, shipped by boat to Hankow; timber, 500,000 pieces, mostly long poles about 8 to 12 inches diameter at butt, shipped in rafts down the river to Hankow and other points. The total tonnage of the above is 184,148 tons per annum; over 500 tons per day.



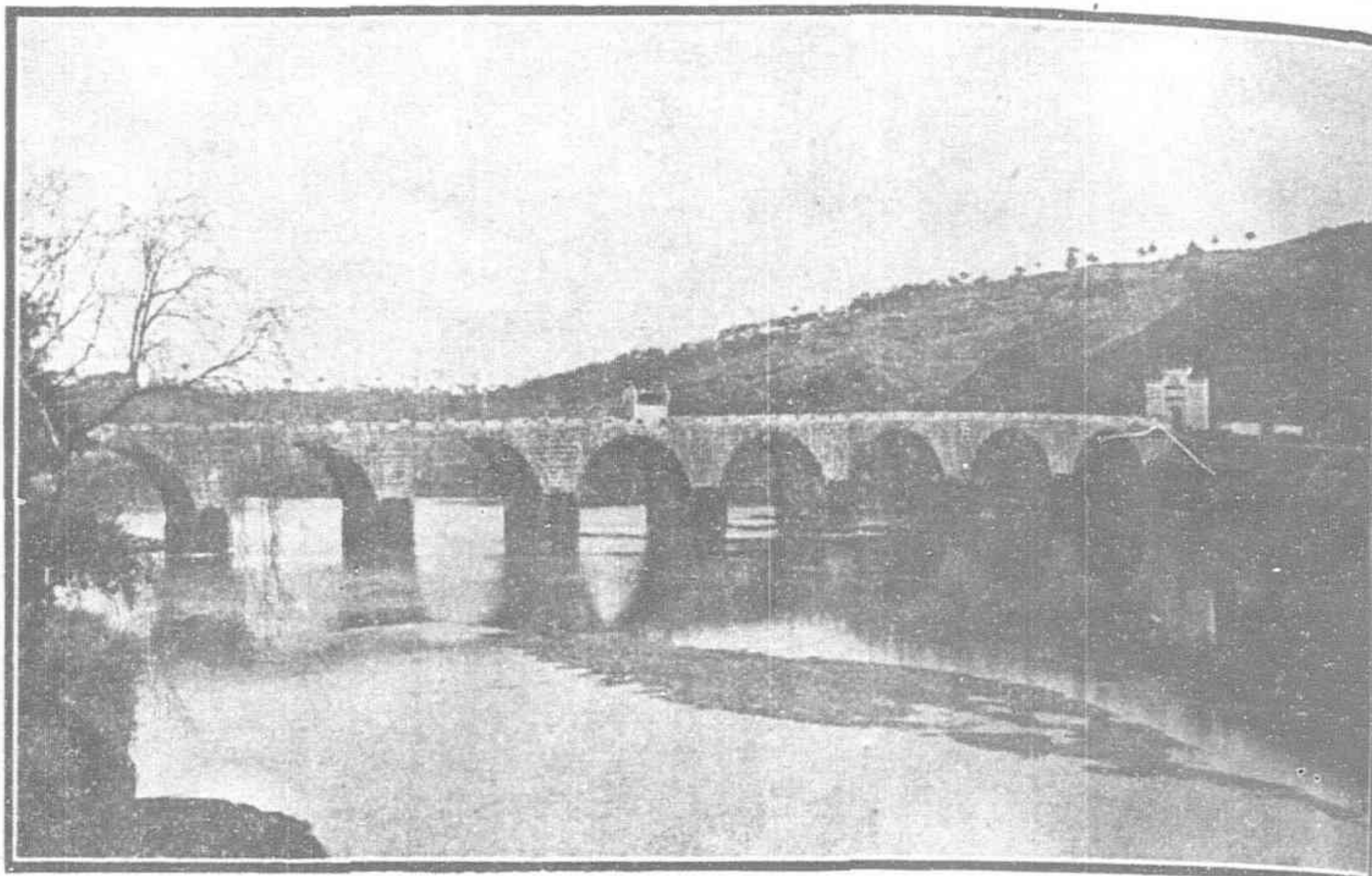
CORMORANT FISHING ON THE SIANG RIVER



A BRIDE'S CHAIR IN CENTRAL HUNAN. THE CHAIR BRILLIANTLY COVERED. THE BRIDE IS LOCKED IN THE CHAIR UNTIL HER FUTURE HUSBAND RELEASES HER



TYPES OF CHINESE CHILDREN AT LULIANGTAN



THE WAIFOCHIAO BRIDGE

There are other exports such as sugar, bamboo ware, furs, etc., but data on these items were not obtainable.

Figures for imports were not available but the following commodities are said to be the principal imports: salt, medicine, cotton, silks, satins, piece goods, muslin and petroleum. The total imports are said to amount to approximately \$20,000,000 per annum.

On account of the danger in navigating the Tzu River large quantities of exports and imports out of, and into, Paoking are carried by coolies instead of on boats. This condition would of course be favorable to a railroad if constructed into this section of country.

The total population of the three Districts of Hunan, which would be served by a line of railroad from a connexion with the Canton-Hankow Railway at Ichiawan to Paoking, a distance of 137 miles, would be: Siangtan District 1,300,000 population; Siangsiang District 1,181,000; Paoking District 1,460,000; total 3,941,000 population.

In conclusion, it would appear from the general conditions of this section of country,—its large population, natural resources, and need for transportation facilities—that a line of railroad to Paoking would secure sufficient tonnage to warrant its construction, in the event of the development of the mineral resources of this section. The future possibilities of development of the coal, iron and antimony deposits, are immense, as these great natural resources have as yet been barely touched, on account of the lack of transportation facilities.

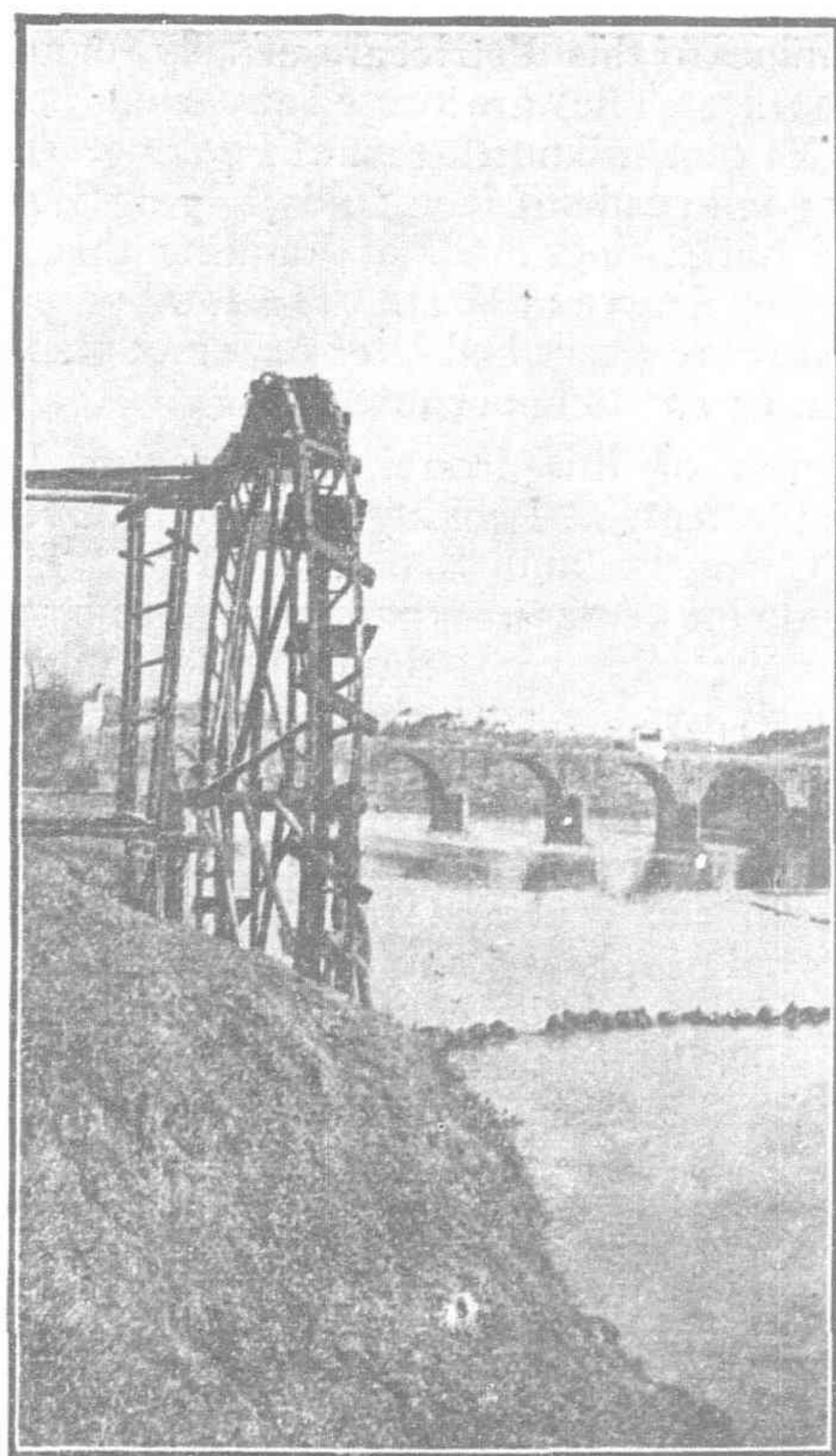
The Tzu River is a stream about 900 feet in width and 10 feet in depth at Paoking, with banks 18 feet to 30 feet high, at the low water stage.

There are numerous places in the river where the rocks are near the water surface and where the rapids are very dangerous. This condition obtains for six months of the year, during low water stage, and during the remainder of the year it is also dangerous, though not as much so as during low water.

The larger coal boats require a crew of 16 men going down stream, as against a crew of four men for larger boats on the Yangtzekiang at Hankow. Sails are never used going with the current, on the Tzu River, on account of the great danger of going on the rocks or turning over at the rapids; oars are used exclusively, in handling the boat down stream, and much skill is required to navigate this stream successfully.

Yangchaitai is an important town 43 miles northeast of Paoking, and is situated on the Lien River. It is a distributing

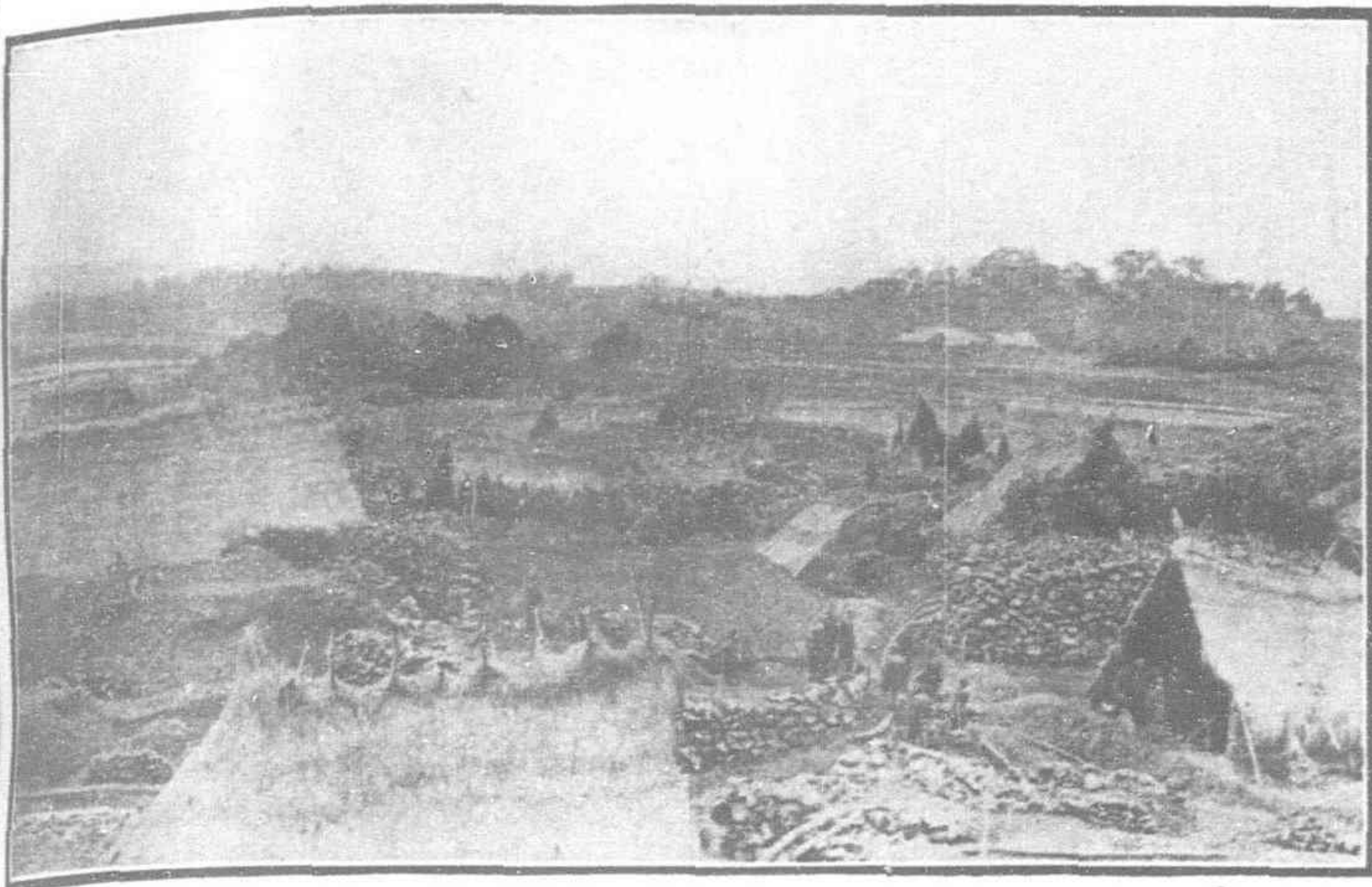
and shipping point for a considerable area of country lying to the northwest and southwest. The Lien River at this point is about 100 feet wide and during high water stage is navigable by small boats. There is a large stone bridge 190 ft. long, 26 ft. wide and 40 feet high, across the Lien River at this place. This bridge is of three stone arches of 60 ft. spans. The bridge was built of limestone 280 years ago, and according to the tablet has never been repaired, although at the present time it is in good condition.



WATER WHEEL IN LIEN RIVER. ELEVATES WATER 30 FEET TO IRRIGATE RICE LANDS

The principal exports amount to, annually: antimony sulphide 1,000 tons; antimony regulus, 600 tons; bamboo paper amounting to \$400,000; coal 2,000 tons. Imports comprise kerosene, muslin, piece goods, salt, etc., aggregating \$400,000 per annum.

The antimony plant of the Kuangyifo Company is located here. The population of Yangchaitai is 20,000.



CHANGCHAICHUNG COAL CAMP NEAR CHINGSUPING, THE SHAFTS BEING UNDER THE THATCHED ROOF



NIEUMASZE COAL CAMP NEAR PAOKING, THESE SHAFTS ALSO PROTECTED BY THATCHED ROOFS

The Mines on the Route

The Changchaichung Coal Mines

The Changchaichung coal mines are located two miles north-west of Chungshuiping. The property is owned by a small stock company of Chinese, the capital is \$2,500, and there are over 200 shareholders. The mines have been producing 667 tons of coal per month with 200 men, but at present there are only 50 men working, and the output is reduced proportionally. About 20,000 tons of coal now mined is on hand at the mines. Native methods are used in mining. The main shaft is 6 feet by 8 feet, and the depth is 300 feet. The coal seam is four feet thick and was struck 80 feet below the surface of the ground. One shaft has been sunk to a depth of 330 feet. Water was encountered 12 feet below the surface of the ground, and more water was struck at a greater depth. The water is pumped out with native pumps. There is one air shaft, 4 feet by 5 feet, on an angle of about 45 degrees. The country rock is limestone. The coal is said to be a good quality of bituminous coal. It sells for \$1.20 per ton at the mines. The greater portion of this coal goes to Yungfeng, where it sells for \$4.80 Mex. per ton. The distance to Yungfeng is 17 miles, and the cost of transporting the coal by coolies is \$2.40 Mex. per ton from the mines to Yungfeng. It requires one day for carrying coolies to make the trip.

Chitzelung Coal Mines

The Chitzelung coal mines are located one mile north, 25 degrees east from Chingsupu. They are old mines—opened 26 years ago—but, after 8 years' operation, work was stopped "on account of lack of capital." From the appearance of the workings it appears that the mines at one time produced considerable quantities of what is said to be a fair grade of bituminous coal. At present no work is being done. The coalbed is said to be 3 to 3½ feet thick, and is inclined at an angle of about 45 degrees. The depth of the shafts is from 200 to 300 feet. Coal was encountered about 75 feet below the surface.

There are coal outcroppings all over the south side of the hill. The country rock is limestone.

Yuchaichung Coal Mine

The Yuchaichung coal mine is located ¼ mile south-east of the trail, in low mountains in rough country. This is a new mine, opened in September, 1916. The coal-bed was encountered at a depth of 80 feet below the surface of the ground. The thickness of the coal-bed is 2 feet to 3 feet, and dips at an angle of 45 degrees. Twenty men are now working in the mines. The output is 66 tons per month, and it is said to be a good grade of bituminous coal. Water was encountered 40 feet below the surface, native pumps being used for removing it. There are small native shafts on an incline of about 45 degrees. Native methods of mining are used. No development work has been done to determine the depth or extent of the coal measures.

The country rock is limestone. The coal is sold locally in small quantities. There are coal outcroppings on the mountain sides all around.

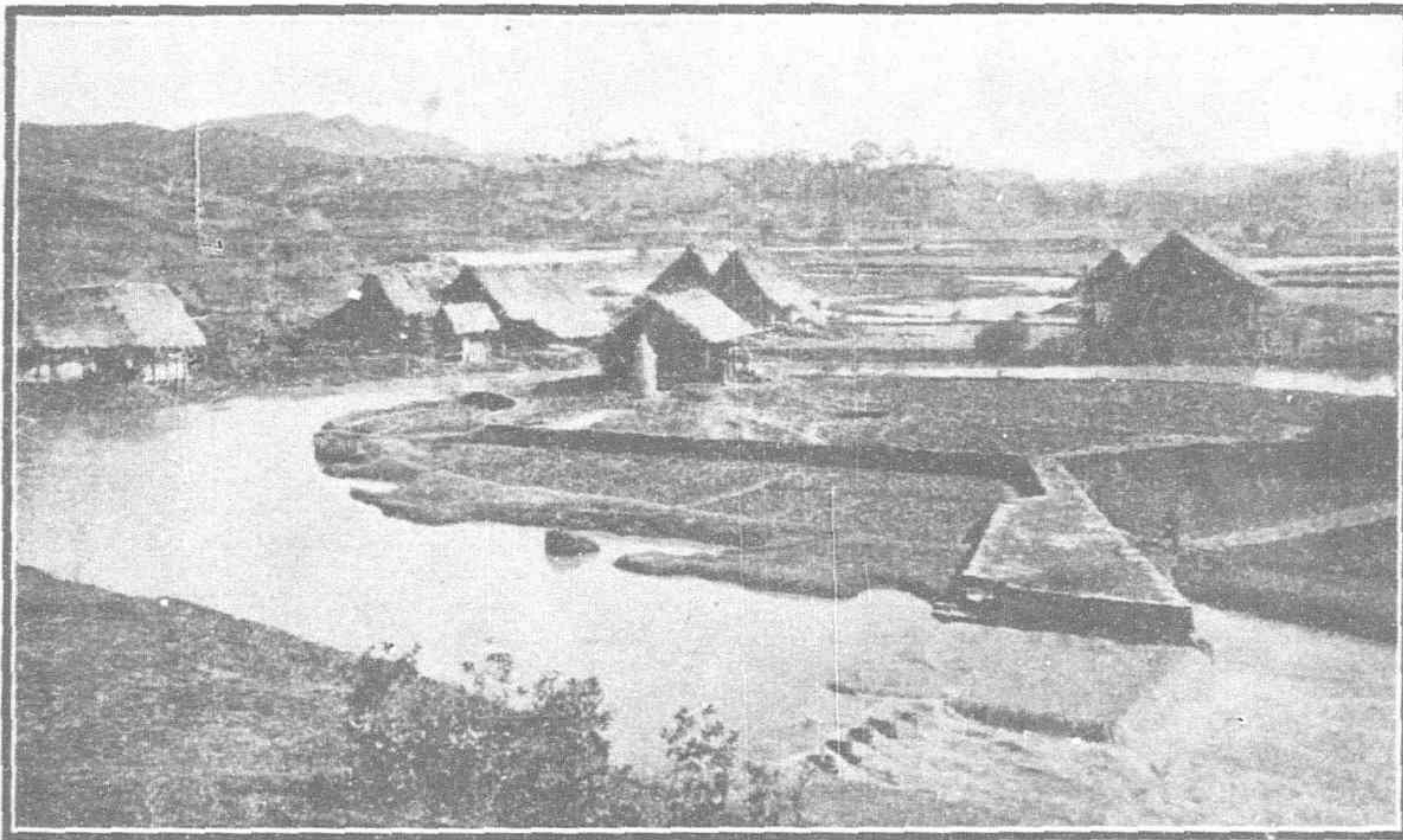
Kingchaichiao Coal Mines

The Kingchaichiao mines are located 2 miles north-west of Chotongpu in low hills near the little village of Kingchaichiao. The land is owned by a man named Liu and the mines are operated on a royalty basis by a man named Wang and others. The royalty is 30% of all coal mined, 42 men are working in the mines in 3 shifts. Native methods are used. There is no modern equipment. The coalbed is about 3 feet thick, and is 20 feet to 60 feet below the surface of the ground. The coal seam dips at an angle of about 45 degrees. The mines are now producing 4 tons per day, or 120 tons per month. The depth of the shafts is 160 feet at present. There are 6 shafts each about 3 feet by 4 feet, roughly timbered. Water was encountered at 20 feet and 40 feet below the surface. Small native pumps are used, and when more water comes into the shaft than can be handled, that shaft is abandoned and another shaft dug. This coal is said to be a good grade of bituminous coal, but no development work has been done to determine the extent of the deposit. The output is disposed of locally at a price of \$1.20 Mex. per ton at the mine. Coal outcroppings are visible all around in this vicinity.

Nieumasze Coal Mine

The Nieumasze mine is located 6.6 miles south of Hungchiao, in the low hills near the Shaoshui River, and is owned and operated by the Paoshing Coal Company of Paoking. It is a new mine, having been opened in June, 1916. There are many coal outcroppings all around in this section. At present there are 600 men working in this mine, which is producing 40 tons per day, or 1,200 tons per month. The coal-bed is 8 feet thick, and lies nearly flat. Native methods are employed. There is no modern equipment, and the coal is hoisted out of the mine by a windlass. There are 7 shafts with an average depth of 80 feet to the coal. The underground workings extend 300 feet out from the main shaft. Very little water is encountered in the mine. The mine is located in sandstone formation, about 40 feet above the Shaoshui River. The coal is said to be a good quality of bituminous coal.

The coal is loaded into small junks and shipped to Paoking at a rate of 50 cents Mex. per ton. It sells at the mine for \$2.75 per ton and at Paoking for \$3.25 per ton. The distance by water to Paoking is about 15 miles; it takes from one-half day to one day to make the trip, depending on the height of water in the river. However, during three or four months of the year, during the low water stage, it is very difficult to make shipments by river from the mine. The mine appears to be one of the most promising among the many located in this section.



HOKI COAL MINE COMPANY'S CAMP NEAR PAOKING

Hoki Company's Coal Mine

The Hoki Company's coal mine is located $2\frac{1}{2}$ miles east of Paoking, and is operated by Mr. N. S. Yao and associates of Paoking. It is in hilly country in the drainage of the Shaoshui River. The coal-bed is $3\frac{1}{2}$ ft. thick and lies 60 ft. below the surface of the ground; the coal bed being under 30 feet of sandstone. The seam is inclined at an angle of about 45 degrees. There are eight shafts down 150 ft. This mine is turning out 100 tons of coal per day. There are 300 men working. Water is encountered at a depth of 30 feet. Native pumps are used for pumping the water out of the mine.

A royalty of 7 per cent is paid to the family which owns the land on which this mine is located, for all coal found in this area. There are about 160 acres of land controlled by the company. The surface of the ground is under cultivation. The prevailing stone is sandstone. Only native methods are used in the mine. The men work in four shifts of three hours each. Windlass and baskets are used to hoist the coal out of the mine.

This is said to be a good grade of bituminous coal and finds a ready market in Hankow, to which point it is shipped by boat at a cost of \$3.33 per ton. It sells for about \$10 to \$16 per ton at Hankow. The price at the mine is \$4 per ton in small quantities.

Foshun Company's Coal Mines

The Foshun Company's coal mines are located 5 miles east of Paoking, near the Shaoshui River, and form a property comprising 20 acres, situated in rough broken country in the drainage of the Shaoshui River. It is operated by Mr. N. S. Yao and associates of Paoking. The coal-bed is 3 ft. 6 in. thick and lies 70 ft. below the surface of the ground. The coal seam is inclined at an angle of about 40 degrees, 300 men working at present. There are six shafts down 160 ft. The output is 30 tons daily.

This is said to be a good grade of bituminous coal which finds a ready market at Paoking and Hankow. It is transported from the mine to the Shaoshui River, two miles, where it is loaded on small boats and shipped to Paoking. From Paoking, the coal is shipped to Hankow. During the past winter when there was a coal shortage this coal sold at \$20 per ton in Hankow.

The prevailing rock is limestone. Water was encountered at a depth of 30 feet. A foreign pump is used for pumping water out of the mine.

A royalty of about \$500 an acre is paid to the family which owns the land on which this mine is located, for all coal found in the area.

The Yinyeling Iron Mine

The Yinyeling iron mine is located $1\frac{1}{5}$ of a mile south, 20 degrees east from Kingszepu, and is situated in mountainous country near the route of reconnaissance. The owner of the mine is H. K. Liu, who lives two miles south of Kingszepu.



HOKI COAL MINE, NEAR PAOKING. SHOWING SHAFT COVERED WITH THATCHED ROOF

The ore body is 2 feet thick and dips at an angle of 45 degrees. There are 7 shafts about 3 feet by $3\frac{1}{2}$ feet; depth 200 feet below the surface of the ground. Iron ore was struck 10 feet below the surface of the ground. 35 men are now working in the mines, 5 men working in each shaft. The mine is worked on a royalty basis; one-seventh of all ore mined being paid to the owner.

The iron ore is smelted in the native blast furnace, which burns charcoal, and which is now in operation near the mine. The furnace turns out 1280 pounds of pig iron per day, or about 20 tons per month. Iron is cast in flat circular pieces $\frac{1}{2}$ inch thick, 2 feet in diameter, and each piece weighs about 40 pounds. The pig iron is shipped by coolies to Yungfeng.

Vengmotong Iron Mine

The Vengmotong mine is located about 5 miles east of Paoking, and is operated by Mr. N. S. Yao and associates of Paoking. It is situated in the hills in the drainage of the Shaoshui River in close proximity to the coal mine operated by the same people. There are only 20 men working in the iron mine at present. There are two furnaces at the iron mine, which are turning out one ton of pig iron per day. This iron is said to be of good quality and is used in the manufacture of implements and utensils of various kinds at Mr. Yao's foundry at Paoking. The ore body is about 3 ft. thick and lies at about a depth of 40 ft. below the surface of the ground. The ore dips at about an angle of 45 degrees.

Mr. Yao states that he supplies practically all of the Chinese kettles required in the Province of Kwangsi, in addition to various other articles of iron. These kettles amount to about 6,650 tons of finished product per year.

Shantongtsung Iron Mine

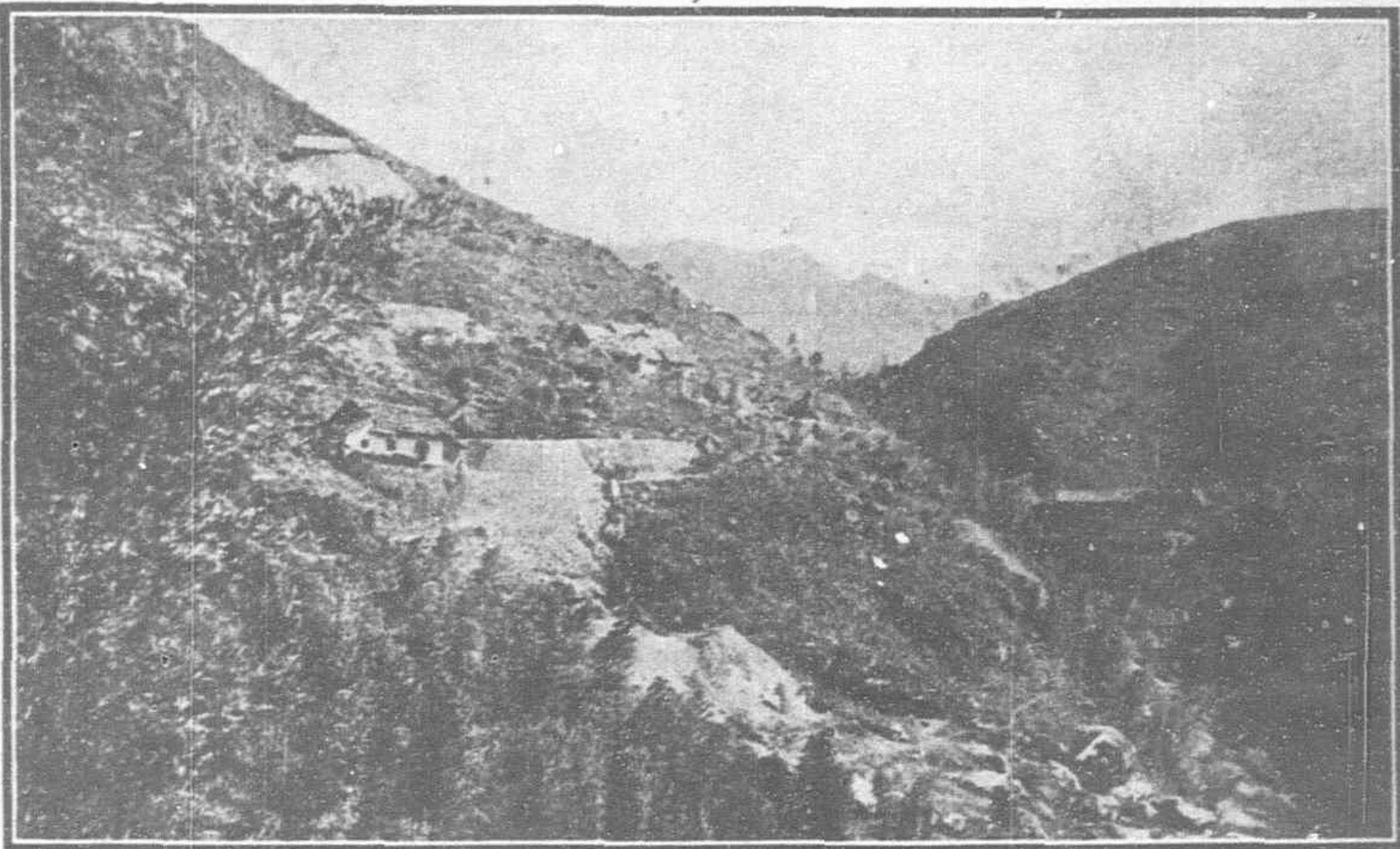
The Shantongtsung mine is located 14 miles northeast of Paoking, and is operated by Mr. L. F. Hur. This is an old mine having been operated for forty years, the present Manager, Mr. Hur, having managed the property since the mine was opened. The mine employs 100 men, of which number 60 men are engaged in the mines, and 40 men are employed in connection with the operation of the furnace. The output of the furnace is two tons of pig iron per day. The mine is located one mile east of the furnace.

There are eight shafts, 300 ft. deep. Ore is encountered 40 ft. below the surface of the ground. The thickness of the ore body is $2\frac{1}{2}$ ft., the dip of the vein being about 45 degrees. The ore body extends for about one-half mile southeast and northwest. Very little water has been encountered in the mine. The ore is carried out in baskets up an inclined shaft about 45 degrees. The size of the shaft is 5 ft. by 6 ft.

There is one large native furnace which burns charcoal. The pig iron is cast in rectangular blocks weighing about 65 lbs. each. It is transported by coolies to Paoking, and sells there for \$10 Mex. per ton, and is said to be a first-class quality of iron.



COOLIES CARRYING COAL TO SMALL BOATS NEAR PAOKING



TYPICAL ANTIMONY MINE, LONGSHAN. THERE ARE ELEVEN SUCH MINES IN THIS LOCALITY

Antimony Mines

Fungfo Antimony Mines

The Fungfo antimony mines are located 30 miles north-east of Paoking, high up in the mountains, and about two miles south-east of the little village of Taokingchiao. These mines are approximately 1,700 ft. higher than the village of Taokingchiao. There are four shafts, now producing about two tons of antimony per day. There are 118 men working at present.

The ore body lies 20 ft. from the surface of the ground in the side of the mountain, and the vein is about 6 inches to 1½ feet in thickness. The vein dips into the mountain at about an angle of 60 degrees. These mines have been worked on ten years.

Antimony Mines near Lungshan Mountain

There are other mines 30 miles north-east of Paoking. The ore is smelted in native furnaces at the mines, and the antimony sulphide is cast into small blocks and shipped to Yangchaitai by coolies, a distance of 17 miles. From Yangchaitai the antimony is shipped by boat to Siangsiang and thence to Changsha.

There are ten of these antimony mines in the vicinity of Lungshan, all of which are owned by the same company, and ship their product to Yangchaitai, where the antimony is refined.

Antimony Plant of the Kuangfiffo Company

The Kuangfiffo Company 43 miles north-east of Paoking, has now completed the first unit of a large plant for the refining of antimony at the town of Yangchaitai, situated on the Lien River, at an expense of \$225,000. Work is now in progress on the second unit of the plant. The plant was erected by German engineers, according to German plans and specifications. The work was started one year ago, and the first unit of the

plant was completed and placed in operation last December. It appears to be a first class, modern outfit, and compares favorably with the larger plants at Changsha. The plant includes nine large furnaces, one brick stack about 75 ft. high, three antimony channels and two refining furnaces. The furnaces use coke obtained from mines six miles northeast of Yangchaitai, where a very good grade of coking coal is mined. At present, 50 men are employed in the antimony plant.

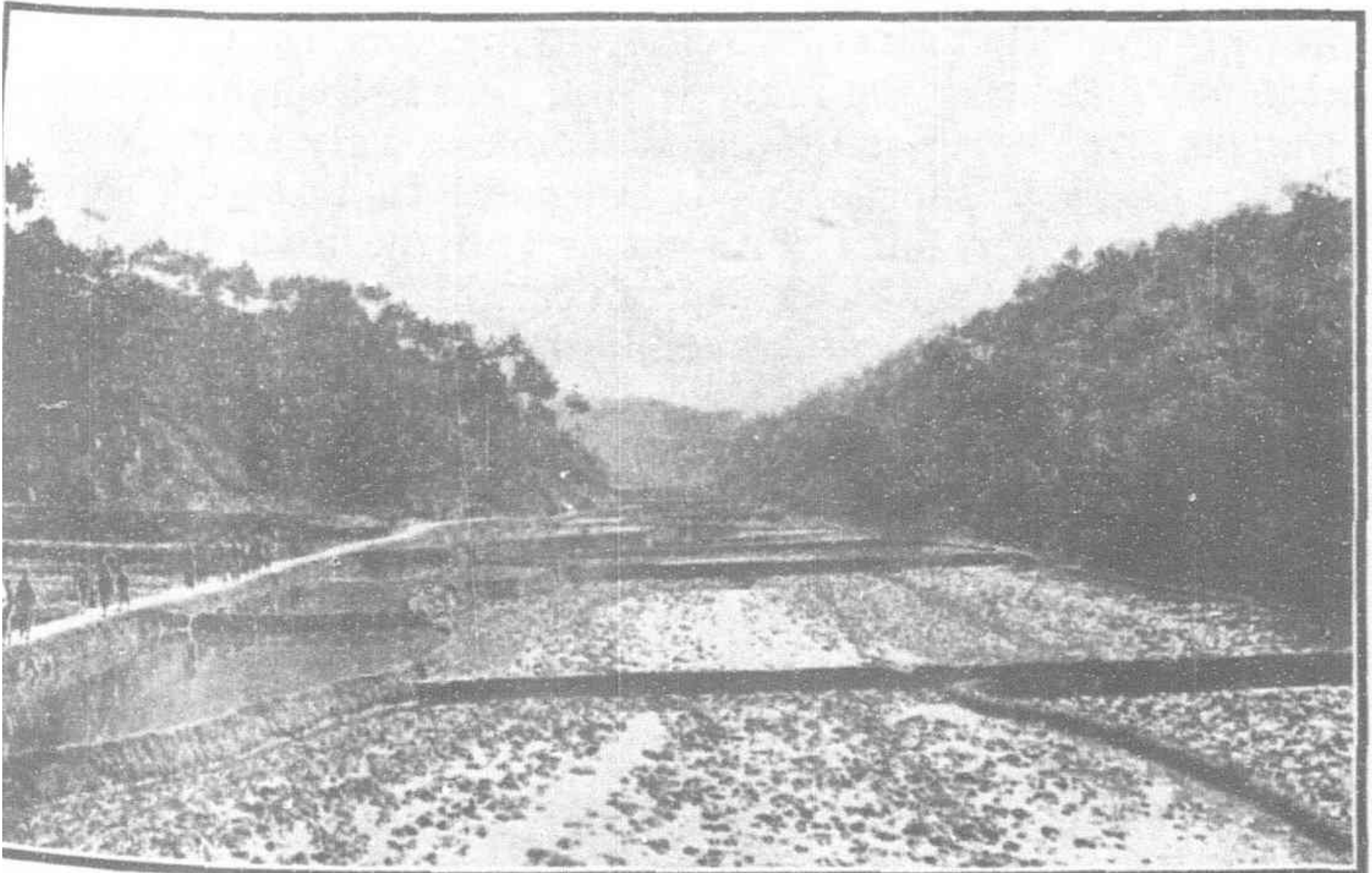
All the output of the ten mines now being operated around Lungshan Mountain is shipped to Yangchaitai, where it is refined, and shipped out in two grades, viz:—antimony regulus, which is about 99 per cent. pure antimony, and antimony sulphide, which is the impure form of antimony. At present this plant is turning out one ton of refined antimony each day, or thirty tons per month; and is handling the entire output from the ten mines at Lungshan Mountain amounting to ten tons per day. Total antimony shipments from this point amount to 1,600 tons per annum.

All of the antimony from this section of the country goes to Changsha where it is shipped out to all parts of the world. It is said that the largest antimony plant in the world is located at Changsha. The present value of antimony regulus is said to be about \$375 per ton at Changsha.

Pottery

Between Ichiawan and Siangtan there are a number of native pottery works and tile and brick plants, which turn out large quantities of bowls, pots, jars and other earthenware, besides tile and bricks.

The clay is of very good quality and the product is likewise good and serviceable, for the most part. Shipments are sent out by boat to various points down the Siang and Yangtze Rivers.



TYPICAL COUNTRY BETWEEN YUNGFENG AND PAOKING



POTTERY WORKS NEAR SIANGTAN

Looking for a Line

The Siems-Carey Company make a Reconnaissance of the Chowkiakou-Siangyang Routes

In the February issue of the FAR EASTERN REVIEW we gave some general information on the country traversed by the projected railway from Chowkiakou via Yencheng to Siangyangfu, and on up the Han River. Since then engineers have traversed the route as far as Siangyang and their observations add to the definite knowledge of the territory. It has to be explained that the Chinese Government originally allotted to the Siems-Carey Railway and Canal Company a line from Chowkiakou to Siangyang, a total distance of 225 miles, to investigate, and, if found feasible, to construct. Later the Government allotted to them a further section from Siangyang to Hanchungfu, near the headwaters of the Han River. The reconnaissance of the latter section is now being undertaken.

Mr. C. D. Jamieson made a barometric reconnaissance from Chowkiakou to Yencheng (40 miles), from Yencheng to Nanyang (105 miles), and from Nanyangfu to Siangyangfu (80 miles). The first section of forty miles was found to be practically level country, densely populated and quite fertile, but strictly agricultural, of a character to compare favorably with the country passed through by the Peking-Hankow Railway.

The City of Chowkiakou

Chowkiakou is situated on both the north and south sides of the Sha-ho (ho being the Chinese for river), about 36 miles east of Yencheng. It is not a District City and has no Magistrate or other high officials. It consists of two walled towns facing each other on opposite sides of the river, and a third town on the north side west of and adjoining the walled town on that side. The walls parallel to the river are about 400 feet apart. The present low water channel is 220 feet wide with a maximum depth of seven feet. The river banks are some 20 feet above the present low water level and the town walls are 25 feet higher. "The high floods," the residents say, "have in the past come nearly to the top of the banks but have never touched the walls." During the break in the south dyke of the Yellow River in 1887 all the country to the north of the Sha-ho was flooded and the north town of Chowkiakou was surrounded by water, though none entered the city. The population is stated to be over 250,000, and Mr. Jamieson estimates from the crowded streets, number of shops, and area covered that 250,000 is not an over estimate. The streets are narrow with about a nine foot roadway in the north town. The most important are paved with flat stones, but the majority are not paved. There are no carts in this town, transportation being by wheelbarrow and coolies.

There are many long streets lined with small shops, well kept up and busy. There are a few rich families in the three towns—whose farms run from a thousand to three thousand mow or more—and there are several fine large residences within very high walls, well-built two-storey brick houses. The majority of the people are poor, with some of medium wealth, but none look underfed and all are busy. Sanitation is as bad as possible but when there is no epidemic the death rate is not above normal. This year there has been an epidemic of scarlet fever which has been very great. There is one Chinese doctor, educated at a mission hospital, in private practice but no hospital of any kind.

A Vast Wheat Field

As this is the low water season, with no crops in movement, the number of boats in the river is small, but for eight months of the year there are 300 to 500 here loading or unloading, the smaller ones going west to Yencheng, on the Peking-Hankow Railway. The exports of this whole region from Chowkiakou to Yencheng, and the tributary regions, are wheat, hides (cow, goat, sheep, donkey, dog) and sesame seed, from which oil is made. The entire region is put down in winter wheat, and on

the road from Yencheng all was wheat as far as one could see. This wheat crop extends north to Peking and beyond, and south to the Yangtze.

In the area under consideration every foot is cultivated, the other crops come after the reaping of the wheat, the middle and the last of May. The next crop in value is sesame seed, of which train loads are exported for the making of oil. In value of exports the hides approximate the wheat and sesame. No actual figures as to amounts exported were obtainable. In some sections large quantities of strawbraid are made for export. The quality is not number one, but both the quality and the quantity can be vastly increased.

In Chowkiakou there is a large cattle market held on alternate days in the north and south towns. A very large percentage of the surplus agricultural products are now hauled to the railway and much produced to the east of Chowkiakou is brought to that place in boats and is then taken by carts or small boats to the railway for final shipment.

The whole section is densely populated and there would probably be no trouble in obtaining labor for railway construction.

In going from Yencheng to Chowkiakou the main travelled road was followed, measuring the distance with an odometer fastened on one of the cart wheels. In returning to Yencheng the carts went along the road while the surveyor followed the telegraph line.

No Watercourses, Rocks or Fuel

Yencheng to Kweichwang—(30 li—10 miles)—This section is at a higher elevation than the remainder of the distance. It is undulating to some extent, the depressions and ridges running north and south. The rise and fall is so gradual that the appearance under cultivation is a flat country. The ridges are one or two miles apart, and the land appears to fall in the north and probably to the south of the main road. In a country entirely under cultivation with no dry or wet water courses, and with not the least sign of water erosion and a general appearance of flatness, it is hard to judge of the direction of these slight slopes. Just outside the west gate of Kweichwang the land falls with some abruptness but both to the north and south there are slight slopes and ample space for development.

Kweichwang to Taichwang—(30 li—10 miles)—This section is practically flat and there are no difficulties with the exception of finding actually the best line on the ground.

Taichwang to Chowkiakou—(60 li—20 miles)—From Taichwang east for some six miles the country is low and it is so nearly level that at this season there was no visible run-off channels. During the rainy season, June to September inclusive, there is often heavy rainfall, and at times a very excessive amount falls within a short period of time. In these circumstances the section is sodden with water and the main road through it becomes impassable. The produce which must be hauled to the railway and the people travelling from Chowkiakou keep to the north of the Sha-ho and reach a station north of Yencheng. This is not an annual occurrence and to-day every foot of this land is in wheat and there is no sign of any swampy ground, and also no sign of any defined outlet. There are no drainage ditches on the low land. With the exception of this low land the remainder of the distance, 14 miles to Chowkiakou, will give but little trouble. There are slight undulations.

The grades should more or less conform to the general slope from Yencheng to Chowkiakou, and would be regulated by the justifiable expenditure. The moving of graves is unimportant as there are but few graves in this section. The principal cuttings will come in the first ten miles, and the highest embank-

ment in the same section and in the low country east of Tai-chwang. There is no rock in any part of the railway line, and in no part of the tributary area. Some of the stone used in this area was brought from Siangyangfu district. Bricks now made here are under-burnt and of poor quality, but the clay is good and good bricks are possible. There is no fuel in this section other than straw, etc. The coal comes by rail from mines within a hundred miles of Peking or north of the Yellow River, in the province of Honan.

There will be only two bridges of not more than 150 feet each. There will be, however, quite a number of small openings. To the north of the main road and the telegraph line there are some fifteen miles of dykes. In one or two cases they come within a thousand feet or more of the road, but much of the way are too far north to be seen. The Sha-ho from Yencheng to Chowkiakow has a dyke on its south bank the entire distance.

Walled Towns with Stories

Yencheng has a population of about 430,000. From this city westwards to Liutienchen the distance is 30 li, or ten miles, the country being slightly rolling. The ridges run more or less north and south, and are not continuous, but fall off towards the north and south. The entire section as far as one can see is green with wheat. Six or eight villages are always visible and also many hamlets. Walled villages are a peculiarity of southern Honan and tell of much fighting in the past. The walls form a rectangle with sides from 400 feet to over a mile in length with projecting corner towers at the gates. The walls are built of packed clay and faced with brick on the outside, with a cemented battlement. There is usually a broad, deep moat round the outside filled with water. The roads entering the town cross the moat on a bridge, the abutments of which are brick and the floor of heavy timber resting on two cross beams. This floor and the cross beams have iron rings in them and can be quickly removed in time of trouble. The long walls do not always mean a large number of people on the inside. Some are prosperous with many people and shops; others with few people and often no shops. All of these towns and villages are surrounded by plantations of trees, which are deciduous, excepting round graves. The trees are grown for timber and shade. There are also orchards of peaches, apricots and plums. From any point of view the effect is of being surrounded by tree plantations some near and some far away, as these plantations overlap.

The section passed over as far as Wuchang (21-35 miles) is slightly rolling and is all under cultivation—wheat at that season. Not one visible or active watercourse was met with and there were no signs of water erosion.

From Wuchang the country is a little more rolling, but from the top of a twenty foot wall appears flat. The railway line will probably swing somewhat to the north of the road.

More and More Wheat

The Sha-ho is some ten or twelve miles north of this place. The walled villages are not as numerous, and the whole section is under wheat, and produces sesame, kiaoliang, beans, etc., also cattle, goats and some sheep. After Wuyang the country becomes much more undulating and the soil begins to show a decided loess formation. Several small watercourses were crossed between Wuchang and Wuyang, all being dry, but the flow was north by east, where they must eventually reach the Sha-ho. Three miles west of Shintien there was a dry sandy bed some 500 feet broad with an 80 foot channel, the water being 18 inches deep. The river bed was cut through a loess formation, the sides being nearly vertical and from fifteen to thirty feet high. This river flows to the north, and, in the lower land to the north of the road some two miles, the river was dyked, the dyke bending to the east. The river must go into the Sha-ho. The visible flood marks were only eight feet above the channel bed. The same river was crossed higher up an hour later. There was much less water and it all went through an eight feet opening in a winter bridge. The river bed showed much erosion of the banks. The undulations through this whole line run more or less north and south. They are not continuous, but taper down to the lowland at each end, and are from one to

three miles long and a third as wide. They appear alternate and overlap a little. With care in location a low rate of grade will be possible without heavy work.

Four li to the west of Paoanyi a considerable undulation was crossed, which, however, tapered to the lowland less than a mile to the north. Two small streams flowing to the south-west, or south by west, were crossed and the basin of the Pai-ho, Han-ho, and the Yangtsze was reached. The country is loess, and the road is often ten or more feet below the surface. For the last three miles before reaching Yuchow the dyke of the Pai-ho was visible.

Now Some Rivers

The city of Yuhchow is on the south-east side of the river. The wall is in fair repair, and is one mile long on the sides and three-quarters of a mile at the ends. The streets are narrow and crowded with people, barrows, ox-carts, etc., and are lined with open front shops. From Yuhchow to Powang is 19 miles. During the day six rivers flowing south were crossed, three of them join sixteen miles south of Yuhchow near Shechen, and form the Tang-ho, which empties into the Han-ho near Siangyangfu. The other rivers are much smaller and eventually flow into the Tang-ho. Small boats come up the Tang-ho from the Han-ho and Hankow, and considerable wheat from this section thus reaches Hankow. The Chao-ho was crossed 107 miles west of Yuhchow, at a bend where the erosion and the concave sides were most marked. At the point of crossing the bed is over 1000 feet wide, and the west bank, which is being washed away, is 20 feet or more high. On the top is a village which is gradually falling into the river. The present channel is about 100 feet wide, and the water not eighteen inches deep. An examination showed that the usual width of the bed was a little over 500 feet.

From Powang to Nanyangfu—the soil is loess, much cut up by sunken roads, and the country is much less undulating. No water courses are met with until we cross the Pai-ho, seven miles from Nanyangfu. The sandy bed of the Pai-ho is a mile wide, the present channel being 100 feet. The bank is low on the east side and but some ten feet high on the west. There are no dykes.

Mr. Jamieson sums up that from Yencheng to Yuhchow there are but few water courses and possibly no rock work until just east of Yuhchow. The amount of material to be moved would not be excessive, a ruling grade being about 0.5%. From Yuchow to Powang the work would be heavier and some large expensive bridges be necessary. The rock outcrops in a number of places in this twenty miles. From Powang to Nanyangfu there are no bridges and but little indication of rock. To avoid the Yuhchow-Powang section there is a possible line more to the north following the Sha-ho and crossing the divide between it and the Pai-ho in the mountains to the north by west of Nanyang. There is also a possible route down the east side of the Pan-ho to the Tang-ho and thence to the Han-ho, near Siangyangfu. This route would cut out the whole region comprised in a triangle Yuhchow-Nanyangfu-Siangyangfu, and also territory west of the Pai-ho.

At Tashihchow, 16 miles from Nanyangfu, one arm of the Pai-ho turns to the north-east. The bed is 1500 feet wide. There are mountains to west and north, while to the east are isolated peaks and rolling foot hills. Up to the foothills the country was in wheat but then rock cropped out everywhere. There was little soil and over half the land was uncultivated owing to its lack of suitability. Twelve miles east by north of Tashihchow barren foot hills were reached, and the trail crossed a low pass of 760 feet and dropped into a valley with a river bed some 600 feet wide. The present channel was 20 feet wide, the water running to the east. The Chinese called this river the Liu-ho. The river valley extended about seven miles and was from 1000 to 3000 feet wide, the sides being precipitous with but little soil. In flood the valley is never under water, which was indicated by the fact that there are many hamlets which had never been flooded. The visible flood marks on the rocks were only two feet above the present level. The maximum rise would be less than five feet. The foothills to Yuhchow were only

cultivated in the valley parts, and there the soil was poor. From Liuhotien to Tashihchow the route lay along the edge of the range and was through mostly barren country.

Mr. Jamieson's conclusions with regard to this section are that the question of route for a railway is between a line following the road traversed and one following the road to Yuhchowfu and thence south down the valley of the Pai-ho and Tang-ho to the Han river—with no connexion with the Nanyangfu district and the country west of the Pai-ho.

The main road south from Nanyangfu crosses to the east side of the Pai-ho and is well above flood line. The bank of the river is nearly vertical and is somewhat eaten into by the current. The country is very level, not a hill being in sight in any direction, and all is under wheat. Between ten and fifteen miles from Nanyang four small water courses were crossed by stone bridges. Watien is a small, thriving, walled town situated in the midst of a country densely populated and under wheat. The people of the town look healthy and well to do. Many small boats were seen on the river at this place, the majority of which come from Laohokow, on the Han River. Between Laohokow and Nanyangfu, it may be mentioned, there is a good cart road which is used during the entire year. The road crosses no mountains or hills, and the only river is the Teng-ho, at the city of Tung.

From Watien to Hsinyeh the country is flat. The latter city is a walled one, the dimensions being three-quarters by half a mile. It is some two miles from the river channel, well above the flood line. As the surveyors reached the city wall they met their first camel train—of about 100 camels—going north. They came from southern Shansi with salt from the salt wells there, which can be sold at Hsinyeh cheaper than the salt brought from the coast. The salt is exchanged at Hsinyeh for native cloth from Yankou near Hankow, which is carried to Shansi.

Outside of Hsinyeh the main road crosses to the west side of the Pai-ho, which, as it was traversed, proved to range in depth from four feet to nothing. The bed is from a half mile to two miles in width, the channel meandering back and forth from side to side. The boats draw about fifteen inches of water. The channel is so narrow that one boat grounding would often stop all the boats behind it, as well as all boats coming up, causing much trouble. The current runs about four feet per second at this period of the year. The country is flat, not a hill being visible in any direction. The river bed is cut deep into the plain, the banks being vertical and from ten to twenty feet high. The ordinary high water in May, June, and July is about eight feet above the present surface. During the early spring and summer but little attempt is made to navigate this river. Many of the workmen work in the fields until the floods begin to fall, and the wheat, etc., is ready for market. Then every boat obtainable is in use. No very large

boats work on the river, the largest carrying about ten tons. Large numbers of boats were seen going up stream, the smaller and medium sized ones being loaded with long bamboos tied in bundles and lashed to the sides. Many had two or three small logs in tow. A few carried deck and cabin loads of coffin logs sawed to the proper coffin lengths. A few of the larger boats had native cloth from some place near Hankow and a general cargo. Where the Tang-ho, which has its head waters north of Yuhchow, enters the Pai-ho, its mouth is about 350 feet wide at the present level and about eight feet deep. Here it is a placid clear river flowing between well defined banks, with no erosion and no sand bed. The banks were covered with grass to within two feet of the water's edge. Continuing down the Pai-ho to Fancheng, on the Han River, the country to the east becomes slightly rolling, but without evidence of mountains, hills, water courses or rock. One of the most noticeable features on the river was the absence of fishermen, which may have been due to the state of the water, since Chinese usually fish in all waters and in numberless ways.

The Decline of Fancheng

Commenting upon the effect of modern means of travel upon the city of Fancheng Mr. Jamieson says: Less than forty years ago Fancheng had nearly double her present population and was the most important city in this part of China. The present population is 286,000. It was on the great highway between the north and the south on the navigable rivers, the Han and the Pai, and also the highway to the great northwest and north. Officials, bankers and merchants all went this way. Fancheng and Siangyeng flourished and were cities of sumptuous inns, guild houses and larger merchants. The first change came with the establishment of ocean steamer lines up the coast. A large percentage of officials, merchants and merchandise now travelled by sea and the place deteriorated. But eighteen years ago, when Mr. Jamieson was there, there were many fine inns. In the short "Street of Inns" there were five or six kept in first-class repair and in every way first-class, from a Chinese view-point, as to food and accommodation. Then came the opening of the Peking-Hankow railway, and to-day there are only two miserable, tumble-down inns in the city. The same is true of all towns from Hanyang to this place.

Laohokow, being at the head of navigation on the Han-ho, has increased in importance during these years, as there was less inducement for merchants and exporters to stop at Fancheng.

Mr. Jamieson concludes that from Nanyang to Fancheng the country is such that the railway grade should not reach four-tenths of one per cent. The line should keep to the east side of the Pai-ho, where the work would nearly all be embankment, of ten feet or more. The country is quite densely populated and is entirely under cultivation. The people are fairly well to do for China and all have sufficient to eat and wear.

JAPANESE SMELTERS AT TAYEH IRON FIELDS

According to the Japanese newspaper, *The China Advertiser*, published at Tientsin, blast furnaces are in course of erection at Tayeh, the site on the Yangtze of the iron ore deposits, and work in this connexion is now advanced. The importance of this enterprise will not be lost upon those who realise how much China stands to lose by not organizing to work her iron into a marketable product. What started as a Chinese concern at Hanyang has already passed under the influence of the Japanese, and unless China bestirs herself while she yet has time she will find that when her industrial development takes place, and when great quantities of iron and steel will then be required, she will be obtaining them from outsiders with little profit to herself. China has been urged time and again to conserve her resources so that she might reap benefit from them, but for some reason that can be explained by nothing else than callous indifference on the part of the authorities to the future, she fritters away important and far-reaching rights instead of taking the steps under responsible guidance to turn them to her own immediate and future advantage. What will happen with her iron deposits unless she is wise in time is foreshadowed by the following:

"The iron foundry at Yawata, Japan, imports ore from Tayeh and engages in the manufacture of iron in their workshops at Kiushu. Finding this inconvenient, however, a plan is set on foot to turn out the metal in China by establishing a foundry at Tayeh. For the purpose a tract of land comprising an area of about 100,000 acres has been leased by the concern on the bank

of the Yangtze at a point not far from the Tayeh mines, where 2 smelting furnaces will be erected. At present, 14 Japanese engineers are on the spot and working under the direction of Mr. Oshima, C. E. In view of the fact that the Yangtze overflows its banks at a rate of once in every ten years, the site will be raised 8 feet from the level of the ground. The time when the foundry can be in full working order is expected to be the end of 1919. Preparations are being made with a view of turning out 280,000 tons of pig-iron in a year.

"The annual output of the ore at Tayeh at present totals 600,000 tons, of which 320,000 tons are supplied to Japan and 280,000 tons to the Hanyang Steel Works. But after 3 years the product is expected to be increased to 1½ million tons. It is understood that the supply to Japan will then be increased by 50,000 tons every year, until the supply reaches the maximum amount of 550,000 tons.

"The increase of output requiring the improvement of transportation facilities, preparations are being made to meet the requirement. For the purpose, the most up-to-date locomotives having 1,000 h. p. will be purchased from America, and 10-ton trucks now in use for carrying the ore will be replaced with 40-ton cars worked by compressed air. Had the machinery ordered of England been manufactured on time, the proposed electric power house would have been erected during last year. As it was, however, it will not be completed until the end of next year. It is expected that the Tayeh Iron Works will supply a steel factory to be established at Kiushu, under the joint stock of Chinese and Japanese capitalists, pig-iron to the extent of 60,000 tons per annum."

NATIONALISATION OF CHINA'S IRON ORES

Strong Policy Required to Safeguard Deposits for National Purposes

In China, the State, formerly represented by the Emperor, is in theory the owner of all the minerals in the land. In practice this State ownership has not been always respected and much of the mineral, especially when found in small deposits in remote districts, is mined without regard to national rights. Ownership of the iron ores has, however, been successfully maintained by the Central Government, and while concessions of individual deposits have been granted to both natives and foreigners, the greater part of the iron ore resources still belong to the nation. About three years ago, alarmed at the rapidity with which the more favorably situated deposits were passing into private hands, a Ministerial order was issued forbidding any more grants of iron ore save with the special permission of the Ministry. Since then, no well considered steps have been taken to perfect a system of development for the iron mines. Nominally, deposits may still be taken up under the general mining law; but actually, it is necessary also to secure the special assent of the Minister of Agriculture and Commerce—an assent that has been almost uniformly refused. In the meantime a realization of the national importance of the iron deposits has been rapidly growing and with this has come a demand that no more grants be made to anyone, but that instead the ores be used as the basis for creating a national monopoly. Aside from the fact that, properly managed, such a monopoly might become an important source of public revenue, there is the conviction that only by direct Governmental action can the iron resources be saved for the use of China. Otherwise it is felt that the deposits will pass under the control of those more concerned in securing iron ore or pig iron as the raw materials, for a foreign industry, than of building up in China great iron and steel works which shall supply the materials without which China can never become economically independent at the same time that they serve as training schools in modern industry. Great Britain is cited as a country which gained its eminent position in industry by the early and intensive development of iron and steel making. This forms the basis of all the machinery trades. Without iron and steel neither railroads nor great ships are possible. The spinning industry, all the milling industries, and nearly all the great modern activities, demand enormous quantities of cheap steel. The rich and powerful nations of the earth are those which have developed their iron and steel manufacture. Modern Germany is founded on steel, despite the fact that both the coal and iron found in the German Empire are of low grade. Spain, which was once the richest and perhaps the most powerful nation on earth, has dropped behind in the industrial race in large part because she is content to ship her ores abroad rather than use them at home. Sweden recognized the danger of such a course and limits by law the amount of iron ore that may be exported in any year, proportioning it to that smelted and manufactured at home. In an article published in a recent number of the FAR EASTERN REVIEW, Dr. Thomas T. Read showed how active Japanese have become in the effort to supplement from abroad the inadequate supplies of iron ore found within the Japanese Empire.

Not every country which possesses iron ore can make iron and steel economically. Fuel, labor, and other elements enter into the making of steel, quite as much as iron does. Brazil has perhaps the largest reserve of rich iron ore in the world, but with a small and largely unskilled population, poor transport facilities, and almost no fuel, it is not likely ever to have many great iron and steel works. China, on the contrary, has iron ore, coal, water supply, abundant labor, a growing trade, and a system of railways which, while small as yet, is still important. There is no natural reason why China should not manufacture iron and steel for all her own uses, and export finished instead of raw materials. Approximately \$18,000,000 is now spent for steel imported. To supply track materials for the railways now contracted for will require, at the rate of 1000 miles per year, an expenditure of more than \$4,000,000 additional abroad. It would

seem to be good economy to keep this money at home, and when any material is exported to put into it the highest permissible amount of labor value, since labor is the resource with which China is most abundantly supplied. To supply others with iron ore and pig iron is short sighted. It gives them the basis for successful industry and the larger share of the total profits, since it is in making steel and steel products that the major profits lie.

There is a widespread impression that China has unlimited reserves of coal and iron. This, unfortunately, is far from correct. China does have extensive coal fields but much of the coal, either because it has been converted into anthracite by processes of nature, on account of high ash, or because it is not suitable for making coke, is not available for steel making. The truth seems to be that notwithstanding the great area of Chinese coal fields, good coking coal is rare. Much of that which is of a quality suitable for use is unavailable because of distance from any large market or place where coal and iron can be brought together economically. Making steel is as much a problem in geography as in geology or technology. Iron ore, coal and pig iron are all bulky, low-priced materials. In the final cost of steel, transport is a large factor. It can therefore only be made where the raw materials can be brought together cheaply or where there is a large local demand so strong that even at high prices steel can be sold. For this reason the most excellent field of coking coal, if found in Tibet, would have no present industrial value, and the same reasons rule out of consideration much of the coal and iron in the back blocks of China.

The belief that the country possesses great quantities of iron ore rests mainly on the fact that iron making is an ancient industry and that native furnaces are found widely scattered in many provinces. Von Richtofen, the great German geologist who did so much to make Chinese resources known, observed these conditions and made broad statements upon which has rested the belief, both in and out of China, that the world could be supplied with iron indefinitely from Chinese mines. Unfortunately, later investigations fail to confirm this belief. When Von Richtofen travelled through Shensi, iron making throughout the world was still a small industry. A deposit of ore entirely adequate to the demands of a furnace of his day is unimportant now. Still truer is this of deposits adequate to supply a Chinese native furnace. The Shensi iron maker regards the achievement of two tons of output with pardonable pride, but a modern blast furnace makes 500 tons of iron requiring 900 to 1,000 tons of ore per day, and a modern steel works in turn is supplied by several such furnaces. It would be impracticable as a mining project, to say nothing of the cost, to attempt to feed such furnaces from the small though numerous, bodies of black-band ores found in the Chinese coal fields. The attempt has been given up in other parts of the world where, as in China, small primitive furnaces were formerly the rule. It would be folly to begin here what has been abandoned elsewhere, and any considerable iron and steel industry in China must depend upon large and rich orebodies comparable to those used in other countries.

While the field has not been completely studied the areas in which transportation, present or prospective, fuel, flux, and other things essential to economical steel making are present, are not numerous, the essential facts regarding each are fairly well known. It cannot be over-emphasized that nothing is of less value than ore, if that term may be used, which cannot be worked, and large bodies of rich iron ore so situated that they can be worked now or any time in the near future, are not numerous in China. It would probably not be far wrong to estimate the total tonnage of such deposits at between 200,000,000 fairly certain and 400,000,000 fairly probable long tons. Compared with the United States and Brazil, in each of which the reserve tonnage is estimated at approximately 7,000,000,000 tons, this is not large. So far as present knowledge goes, China, as to iron

resources, ranks rather with such a country as Austro-Hungary than with the great iron holding countries of the world.

The present requirements of Chinese furnaces and the export trade in iron ore cannot be stated accurately but may be roughly estimated at about 1,000,000 tons per year. China has, therefore, plenty of ore for her own present requirements. It is to be anticipated, however, that as modern industry develops in China the per capita consumption of iron and steel will increase rapidly. Long before the industrial standard of England and the United States is reached heavy drafts upon the local ore supply will begin to be made. Additional deposits will no doubt be found and with improved conditions lower grades will become workable, but within a period that is short compared with Chinese history, the amount of ore available is more likely to be deficient than excessive.

It is by no means too soon for China to reserve her ores for national use. A number of deposits are already in alien hands, and of the reserve estimated above a considerable part consists of iron ore already ear-marked for use as ore or pig iron outside the country. It is not surprising that the demand for nationalization and the creation of a Government monopoly is being given to the problem of how best to bring this about.

Despite efforts from time to time to organize industry on a purely Chinese basis, it is widely recognized that at present China has neither the money nor the expert knowledge needed to found such a complex industry and nurse it through the teething stage. The total steel consumption in China, while large enough to support the Hanyang and at least one other big works, calls for steel in many forms. Just as ore is worth nothing until made into pig iron, which in turn must be largely converted into steel, the latter must be rolled into rails, bars, plates, wire, sheet and many other forms before it can be placed on the market. As in every country industrially young, and as to modern industry that phrase applies to China, the amount of any one product demanded is small, so that mills built large enough to operate economically and compete with those in other countries would necessarily stand idle part of the year. At the Imperial Steel Works at Wakamatsu, in Japan, it was necessary to finish steel

in more than a dozen forms before a satisfactory rate of output could be built up. Even so, and with all the resources and skill of the Japanese Government to back the plant, it was many years before the works showed a profit. To meet China's needs a single unit should include iron and coal mines, limestone quarries, blast furnaces, steel works, and at the steelworks there should be plants to produce at least four finished products, subsidiary things such as power plants, pumps, by-product coke ovens, local transportation, docks, warehouses and similar items. It is uncertain what such a works would now cost or whether indeed all the machinery and supplies could be assembled in war time, but at ordinary prices and exchange \$30,000,000 to \$40,000,000 would be called for to build and start such a works going. Clearly, any such sum is beyond the means of any company likely to be organized and managed by native capitalists. It must be a foreign or a Governmental enterprise and in the present condition of public temper that makes certain that, if built at all, it must be by the Government. The latter, however, can not afford to invest so large an amount whether raised by loans or otherwise, without adopting every safeguard for the investment. One such must be protection against unlimited competition in the early years of the enterprise. If the Government is to make money out of the business it must run it on a business basis and that involves building one big and economical plant instead of many small and inefficient ones. As the market develops other furnaces will be needed and they should, of course, be erected where they will best serve the market, but in the initiation of the enterprise and while training a sufficient corps of future Chinese Carnegies and Hadfields, the work must be centralized. During these early years also, foreign experts are as essential to success as foreign money is likely to be. It should be possible to secure both the money and the expert service upon terms that would not involve the passing of the enterprise out of Chinese hands, by allowing the foreigner to secure the return of his money and to make a reasonable profit during the early years of the enterprise. It is through some such profit sharing plan that a national iron and steel industry seems most likely to be established.

China and Her Iron Deposits

Proposed Legislation for Prospecting and Developing Iron Mines

We publish below a translation of a Bill recently placed before the Chinese Parliament by the Minister of Commerce, Agriculture and Industry, to provide for the "granting of special permission for prospecting and developing iron mines." In our editorial columns we comment upon this measure, which, if adopted by Parliament is calculated to defeat the objects aimed at by thinking Chinese who realise that for the future industrial development of China the iron deposits—not over-large as it is—should be conserved for national purposes, and be developed under national control. The Bill is as follows:

1. The Minister of Agriculture and Commerce is hereby authorized to grant special permission for prospecting and developing iron mines in China in accordance with the following regulations.

2. Permission shall only be granted to citizens of China or corporations formed under the commercial laws of China. Non-citizens of the Chinese Republic shall not be allowed to be stockholders and all stock certificates shall have the name of the stockholders on them.

3. Management may be either purely commercial, semi-official or on a cooperative plan between the Government and individuals.

4. The right to prospect and develop iron mines shall not be mortgaged for any purpose.

5. All members or employees of the iron mining corporation, with the exception of the technical experts, shall be limited to citizens of the Chinese Republic. All contracts for the engagement of foreign technical experts shall have the approval of the Minister of Agriculture and Commerce.

6. All agreements for the sale of iron ore to foreign countries and all other agreements must have the approval of the Minister of Agriculture and Commerce and no agreement for selling iron ore shall be made until the ore is actually produced.

7. The Government shall have an option on the iron ore produced by the iron mines.

8. Aside from the regular taxes on iron mines as provided in the mining laws, an additional tax of 2/10 percent shall be levied according to regulation of Section 1 of Article 71 of the Mining Laws.

9. All iron mines which have been prospected and developed before the promulgation of this law must be submitted to the Minister of Agriculture and Commerce for approval within a prescribed period. The length of the period and manner of approval shall be promulgated by presidential mandate.

10. Contracts with foreign technical experts existent before the promulgation of this agreement and all agreements for the sale of iron ore to foreign countries and all other agreements must be approved by the Minister of Agriculture and Commerce within three months.

11. Any breach or violation of this on the part of the mining corporation shall be considered sufficient reason for cancelling the special permission or franchise.

12. Aside from these provisions, all mining laws existing now shall stand except the provision as to options.

13. The Minister of Agriculture and Commerce shall be authorized to promulgate a set of detailed regulations.

14. The present regulations shall be effective from the date of promulgation.

Petition to Parliament

Wang Chin-pan and seventeen representatives of the overseas Chinese have submitted the following petition to the Senate:—

"In Article 2 of the proposed Regulations governing the operation of iron mines which are embodied in a Bill now before Parliament it is stated that 'Any person who is not a citizen of the Republic shall not be allowed to become shareholders of iron mining companies;' as this provision affects most seriously the future prospects of the mining industry of the country, we beg to express our opinions on the subject.

"As our country is so poor and weak, it is imperative that immediate measures should be adopted to develop the natural resources. In the mining industry, the operation of iron mines is the principal thing, as it answers the immediate requirements of the nation. The Government is well aware that owing to the financial difficulties it has not been able to undertake such important enterprises. It is obliged to encourage individual merchants to start the operation either independently or in co-operation with itself. But in the Regulations under consideration strict restrictions are placed on the ownership of the mines and mining shares. They are calculated to prevent the influx of foreign capital, and seem to have been drawn up without considering the difficulties of the merchants in raising funds.

"Unless there is a large capital, any attempt to operate iron mines will be doomed to failure; and it is universally acknowledged that the Government can only raise sufficient funds from among the wealthy overseas Chinese merchants and capitalists. The Government has hitherto endeavoured to persuade these wealthy men to return to China to develop the resources of the country. But most of the overseas capitalists, who have accumulated wealth in foreign countries, have been obliged to be naturalized as foreign subjects in order to obtain effective protection. These men are at heart pure Chinese with strong feelings of nationality, and it is not seldom that many of them have invested money in their mother country to develop various industrial enterprises.

"If the Government should now refuse to admit them as shareholders of iron mines in China, because they are naturalized foreign subjects, they shall be greatly discouraged, and the efforts of the Government to show appreciation and good will to them would prove to be insincere. It is therefore most impolitic to exclude them from enjoying the rights of citizens in the country. We hereby propose that a clause be added to the said Article to the effect that 'with the exception of overseas Chinese merchants and capitalists who have been naturalized as foreign subjects,' or 'with the exception of the returned overseas Chinese merchants and capitalists who have been restored to their own nationality.' Thus the difficulty will be surmounted.

"Again in Article 6 it is provided that unless the ore has been excavated from the mine, no contract shall be made for its sale, etc. This is evidently in conflict with the provisions made in Article 7 of the same Regulations, therefore it is necessary to eliminate the same. It is our earnest hope to see the development of the iron industry in the country, and after long consultation with our people abroad, we, in the capacity of their representatives, hereby submit their opinions to the Senate for consideration."

ANOTHER BOARD OF COMMUNICATIONS SCANDAL

The Ministry of Communications has been in bad odor during the regime of the late Minister, Mr. Hsu Shih-ying. As we went to press with the May issue he was placed under arrest, was later released on bail, and now is awaiting trial. Charges of corruption in connexion with the contracts to purchase locomotives, and lease cars, which were outlined in last issue, will have to be answered by him. Since his arrest another scandalous contract has been brought to light, this time with respect to the purchase of telephone and telegraph material. It was, it is re-

ported, signed by the official in charge of the Telegraph and Telephone Department of the Ministry of Communications, and gave to certain Japanese a monopoly on such supplies as are called for by that Department. The Minister may not have had anything to do with the contract, but its signature during his tenure of office looks exceedingly suspicious. The *Peking Daily News* thus describes the operation and effect of the contract:

On the 7th of May this year, tenders were opened in the Ministry for about \$2,000,000 worth of supplies for which twelve firms competed, the principal bids coming only from American and Japanese firms. They were opened in public and a copy of each was distributed to the representatives of the firms so that each of the bidders might be enabled to see the tenders of his competitors. In accordance with the well-known practice obtaining in the case of such tenders, it has been customary for the firm submitting the most satisfactory tender for the supply of materials required by the Director of the Department to be awarded the contract.

This year something like a great many tenders were invited comprising supplies of materials for the general telephone system and for extensions to the telephone systems of Peking, Tientsin, Soochow, Chefoo and Nanking.

The amount of work done by the various firms in making up the lists and quotations was extensive, several months having been allowed for this, and on account of the fluctuating state of the metal market, it was necessary to send and receive many expensive cables with regard to these tenders.

When the tenders were opened it was found that an American firm had been able to offer a greater quantity of materials than any of the other competing tenders and that in a large number of instances the quotations were the lowest. In fairness and justice to itself, therefore, it was entitled to receive a large portion of the business. The following day representatives of a Sino-Japanese company called on the Director of the Department and produced a secret agreement whereby, in return for a loan amounting to several million Mexican dollars at an exorbitant rate of interest, the Ministry had agreed to allow this Japanese firm to alter all its quotations after the tenders were opened, as if this Japanese firm, by reducing its prices to meet those of its competitors, was entitled to secure the business. This loan is illegal because, being arranged through a Japanese bank, it is a foreign loan and, in accordance with the terms of the Provisional Constitution, is not valid until approved by Parliament. The agreement covers a period of two years, during which time much more material will be needed. If American business men are made to understand that for two years there is no possibility of selling materials to the Telephone and Telegraph Department, they will naturally have no interest in going to the trouble and expense of making offers. The Government will then be obliged to pay whatever prices the firm with a secret agreement may demand in future.

The point is well brought out in the present tender. For the largest single item of steel and copper wire, only two firms were able to submit quotations. The American firm, on account of war demands made by the United States Government, was unable to quote until a few days ago. The Japanese firm is well aware of this. On the day of the tender, however, the American firm succeeded in quoting a price for the material. Of this the Japanese company was ignorant, and believed it was the only firm in a position to quote. This material has a market value of £29,000. The Japanese, therefore, asked a price of just under £39,000, or £10,000 in excess of the well-known market price of steel and copper. In other words, the Japanese firm asked the Government in respect of a market commodity 35 per cent. above the recognized market price. Now if foreign firms are convinced by the fact that the Government is disposed to uphold this illegal agreement, they will during the life of the agreement not go to the trouble and expense of offering competitive bids and the Japanese will be free to ask 35 per cent. or 100 per cent. in excess of the market price for anything that is bought.

In view of these two considerations involved—that of unfairness to a people which has always been friendly and just to China and that of placing a burden on the tax-payers by the purchase of commodities at much above their real value—it is of interest to note whether Parliament will support this illegal agreement or will indignantly refuse to allow the Acting Minister of Communications to accept it.

"DOWN WITH PARLIAMENT!"

The War Question Submerged by Military Governors who Demand Dissolution of Parliament and Revolt

China's approach to a state of war with Germany has been made by the most devious and tiresome paths which her statesmen, of conflicting opinions, could well choose for her. It would seem that the more earnestly the Chinese approach a problem which awaits immediate decision, the further away they get from it. During the past month the Chinese nation has moved into—we cannot say passed through—the most critical phase of its national existence. Its position among the peoples of the earth has been generally recognized, in and out of China, as dependent upon immediate decision of the momentous question of a declaration of war upon Germany. Nearly every influential party in China has at one time or another during the past six weeks expressed the party opinion that China, to acquire prestige among the nations and to protect herself during the anticipated period of reconstruction which will follow the world war, must declare war upon Germany and ally herself with America and the Powers which form the European Entente. Yet it has been impossible to bring President, Premier, Cabinet, and Parliament into line politically for the passage of the war bill, upon which each particular political faction of appreciable influence bases its hopes of China's *post bellum* regeneration. Petty politics have obscured every vital issue, and the party dispute which has grown out of the Parliamentary indignation about a *contretemps* which discomfited the representative body on the 10th of May has threatened to postpone indefinitely the decision upon the war bill.

The Premier, together with a few vice-ministers and a faithful secretary, is portrayed in vernacular journals of a radical tendency as an aspiring autocrat who, by all the laws of constitutional government in other lands, should have retired long ago; and on the other hand the supporters of the obdurate Tuan Chi-jui describe the opposition in Parliament, which now obstructs a vote upon the war question, as a recalcitrant minority, seeking from selfish motives to overthrow the government, taking an unfair advantage of a delicate international situation to play politics, and attempting to force the Premier out of office in the interest of the leaders of the veteran radical wing of the Kuo-mintang party. In the vociferous discussion of the merits of these charges and counter charges the vital issues of the war, which were brought prominently into the foreground immediately after America's formal entry into the conflict was announced, would seem to have been ignored, and the Chinese Republic, very much centered upon itself, is far more interested in its internal dissensions than in the progress of events in Europe or in their relation to the present and future of the Far East.

A few weeks ago it seemed almost certain that with the political prestige which Premier Tuan Chi-jui had earned through his breach of relations with Germany, the leader of the northern military party in China would have the ready support of his Cabinet and of a safe majority in Parliament when he came to pass the war measure through these two bodies. Up until nearly May 1st a certain number of Chinese seemed to believe that the war measure would not be put before Parliament until the concessions from the Allies, which Premier Tuan had practically pledged himself to procure, had been guaranteed. But after the Premier had had several sessions with the Tuchuns and other delegates to the military conference all discussion of terms and a *quid pro quo* was dropped, for the obvious reason that the Premier had failed to extract promises of concessions from the Allies. An energetic campaign was instituted at the beginning of the month of May by General Ni Shih-chung, Military Governor of Anhui Province, supported by a number of his colleagues, in favour of an unconditional declaration of war upon Germany. What can be best described as "experience meetings" were held with various groups of legislators, advisers, and political leaders, at which General Ni impressed upon his

various audiences that he had been converted to the war policy since his arrival in Peking from the dark heathen doctrine of compensation to the altruistic principles for which America and the Allies were waging war, and that he looked with great disfavour upon any attempt to propitiate the Allied Powers and to win concessions from them. He insisted before Parliamentarians and Ministers that he was moved to the martial yearning by a sincere devotion to the grand cause of democracy and the preservation of democratic nations and that he considered it greatly below China's dignity to dicker for terms when entering upon a course which partook of the nature of a holy war.

In this spirit General Ni Shih-chung and three of his converted colleagues called upon the Cabinet on May 1st and after his address to the Ministers it was believed that the executive body was fully prepared to submit a war bill to Parliament based upon the preservation of the rights of nations. For some days thereafter Premier Tuan and the Military Governors were exceedingly busy entertaining groups of Parliamentary members whom they hoped to convert to the war cause and the out and out support of a tottering Cabinet. On the 2nd of May the Premier received no less than 400 guests at a tea party and there took the advantage of informing them upon his policy and his principles. A great mass meeting was held in the Central Park in the Imperial City, which was attended by more than 6,000 people, and at which Tang Hua-lung, speaker of the House of Representatives, made an appeal to Chinese patriotism and spoke most effectively for war. The Premier was, however, in no hurry to rush the bill through Parliament, and, though he then seemed to have a sufficient support, his retainers in his party were eager to make matters doubly sure by postponing the vote for a time to allow for a thorough canvass of the members of Parliament.

It was at this juncture, when the followers of Premier Tuan were advancing consistently upon what they believed to be an almost certain issue, that there was an absurd, unjustifiable, and vicious occurrence outside of the Houses of Parliament which threw both bodies into a panic and gave the Premier's enemies every opportunity to fasten upon him dictatorial motives and the methods of intimidation. A crowd of nearly two thousand ill-dressed and ill-fed Chinese, under the leadership of a few men who evidently thought that they were supporting the war cause in the Premier's interest, and could compel Parliament to sustain the disorganized Cabinet, assembled outside the House of Representatives on May 10th, three days after the Cabinet had passed the war bill and had submitted it to Parliament, and attempted to force by petitions and demonstrations of some violence immediate action on the bill. Members of Parliament were not allowed to leave the building for nine hours and it was not until the Premier had arrived at Parliament House in the evening and had himself given orders that the police and soldiery scattered the riotous demonstrators.

The saner elements in almost all parties agreed after the first heat of discussion which followed this event had cooled that it was very unlikely that so silly a display of mob violence could have been made at the personal instigation of Premier Tuan Chi-jui. Among his opponents, however, the Premier got the credit for the assault upon Parliament for a long enough period seriously to compromise his war measure and in the storm which followed he was deserted by the majority of his colleagues in the Cabinet who retired in the face of criticism. Resignations were tendered by Minister of Justice Chang Yao-tseng, Minister of Agriculture and Commerce Ku Chung-hsiu, Minister of the Navy Chen Pi-kuang, the newly appointed Minister of Finance Li Ching-hsi, and by Minister of Foreign Affairs Dr. Wu Ting-fang. The Minister of Education, Mr. Fan Yuan-lien, asked for sick leave and finally resigned on May 20, and the secretary of

the Cabinet, Chang Kuo-kan, at first attempted to tender his resignation. At the same time Parliament refused to meet, fearing a repetition of the violent scenes of the 10th instant and all that was achieved for some days was an informal meeting of a minority in the House of Representatives and an informal gathering of some of the Cabinet Ministers together with a number of the Military Governors. Premier Tuan, five days after the *contretemps*, insisted that the incident was not one which should be made a basis for party disputes considering how important was the war issue, and in the name of the Cabinet he sent a message to Parliament reminding that body that the war bill had been before it a week and that there had not been any discussion of it up to that time. He asked for immediate action. But action was not forthcoming.

The press opposing the Premier, noting after the 15th of the month that Parliament chose to ignore the Premier's message and that it proceeded to order its agenda with no reference to the war measure whatever, began to clamour for the Premier's resignation and for the formation of a new Cabinet. At the same time voices in the opposite camp cheered the Premier on, encouraging him to stand by his policy and his position, to shape a new government if necessary, but not to give way before what they claimed to be a clamour of the minority. Rumours were abroad of the possible dissolution of Parliament and the Military Governors were said to have suggested all manner of drastic treatment for the opposition. It was widely rumoured that an appeal had been sent to General Chang-hsun, commander of the famous pigtailed army at Hsuehowfu, from General Hsu, former secretary of the Cabinet, suggesting that the veteran reactionary take the lead in dissolving Parliament, removing the President in the event of his refusal to dissolve the representative bodies, the siege of Peking by the Nanyuan forces, and the calling of a military conference to frame a new government. To his credit in this case Chang Hsun stoutly refused, having borne all the responsibility for the former military conference at Hsuehowfu which came to little or nothing.

While the military leaders, who are regarded by the opposition as a genuine menace to democracy, are clamouring for the dissolution of Parliament and for new elections, the members of Parliament, united in opposing any such move, are refusing to consider the war bill until a new Cabinet is formed. At the first meeting for regular business after the riotous demonstration before the Parliament houses, which was held on Saturday, May 19th, the war measure did not come up for full discussion but was by a motion emanating from the opposition, temporarily pigeon-holed pending the reshaping of the government.

Postponement of the War Question

The result was in short an intimation from the House that the Premier, who had now no Cabinet, except the absent on sick leave Minister of Education, must make way for another man. In the discussion members took exception to the fact that the Premier had taken upon himself to refer a matter relating to war direct to Parliament when that responsibility rested by virtue of the Provisional Constitution with the President, and pointed out that should Parliament vote in the affirmative there was no Cabinet to take up the responsibilities of such an important measure as a declaration of war. "If the war question is to be discussed," argued the member leading the debate, "the House would naturally ask the Cabinet questions regarding finance, national defence and the means to maintain order in China, and who is to answer these questions if there is no Cabinet? And who is to be responsible for the enforcement of the war policy if it be passed by the House?" This speaker, Chu Fu-chung, a member of the Kuomintang party, then urged that if the war proposal was rejected the situation would become exceedingly grave, as the Cabinet, which was absolutely disorganized, would not be able to cope with the diplomatic and internal situation, and he moved, to avert this *contretemps*, "that the question be put aside until the entire Cabinet has been reorganized." There was an attempt on the part of the anti-war faction to have the question of a declaration of war rejected, but this was defeated. On the other hand the following motion was carried: "That the proposal to declare war on Germany be temporarily postponed until after the entire Cabinet is reorganized, when the question

shall be brought up and discussed." The voting was 229 for and 125 against, some 54 members not voting. Loud applause greeted the decision.

In any country where what is known as parliamentary practice obtains such a vote as this by Parliament would be regarded as a vote of want of confidence in the Government, and if it were possible in any other country for a Premier to be standing alone and functioning as the Government, as General Tuan Chi-jui at this time stood, there would be no question as to what his action would be. He would retire upon Parliament declaring itself, even if he did not do so before. But China seems to be keeping up its old reputation for doing the antithesis of what the West would do in similar circumstances, and though General Tuan stands isolated he neither attempted to resign when his Cabinet disintegrated about him nor when the House of Representatives plainly indicated to him that in their opinion he should make way for a man more in their confidence.

On the contrary an insidious attempt to sustain the Premier by overthrowing Parliament was made in the name of a number of Military Governors who had been in Peking to the Conference. Hardly had Parliament dispersed after voting on May 19 than certain Military Governors called a meeting of their colleagues and drafted a petition to be sent to the President, the Premier and the Provinces, urging the dissolution of Parliament. The Tuchuns did not base their action upon the postponement by Parliament of the war question, knowing that such a plea would not be popular in view of the objection to war in many quarters. Instead they made the Constitution now being dealt with by the Constitution Conference the excuse for their demand. "What has shocked us," they stated in their petition, "is the passage of a number of articles of the draft Constitution," and to prevent the Parliament from bringing "disaster" upon the country they demanded the dissolution not of the Constitutional Conference (the Houses sitting as a conference), but the actual House of Representatives and the Senate. The petition, which was submitted to the Premier at noon on Sunday, May 20, and was forwarded to the President at 6 p.m. on the same day, was as follows:

Military Petition to Dissolve Parliament

"The undersigned beg to submit this petition to the President, requesting that the Constitution be revised in order to clearly define the basis of government and maintain the foundation of the country.

"The existence of a country depends entirely upon law, which has its origin from the Constitution of the country. Hence the fate of a country hangs on the efficiency of the Constitution. Since our arrival in the Capital, a month has elapsed. Words fail us to describe the symptoms of danger which now prevail in the political situation. This, however, is not difficult to remedy by taking a new course of action. What has greatly shocked us is the passage of a number of articles of the draft Constitution by the Constitution Conference at the second reading and those approved by the Committee meeting the other day. Among these articles one reads that when the House of Representatives passes a vote of lack of confidence in the Cabinet Ministers, the President shall either dismiss the Cabinet or dissolve the House of Representatives, but the said House must not be dissolved without the approval of the Senate. Another states that the President can appoint the Premier without the counter-signature of Cabinet Ministers. The third provides that any resolution passed by both Houses of Parliament shall have the same force as law.

It should be remembered that under the Cabinet system, the Cabinet is responsible to Parliament. If the policy of the Cabinet is disapproved by Parliament, or when the Cabinet is impeached by Parliament either the Cabinet must be dismissed or the Parliament dissolved and an appeal made to the country. It is this equilibrium of power and responsibility which maintains the balance. Now the text of the new Constitution limits the power of dissolving the House of Representatives to the case of a vote of lack-of-confidence being passed. Now when a policy is disapproved, the policy forms the basis of objection, and if an impeachment is passed against the Cabinet the charges must be mentioned. But a lack of confidence vote is empty and lacks definition. Although it is a customary practice in constitutionally governed countries there is no written law to define it.

"As a counter-balance the power invested in the Cabinet for the dissolution of Parliament should be absolute, but in the present case the House of Representatives can only be dissolved with the approval of the Senate. Being institutions of a similar nature, both Houses naturally have mutual sympathy for each other. It is therefore impossible for the Government to obtain the approval of the Senate to dissolve the House of Representatives under such circumstances. This is not only to place the Cabinet in an impotent position but also to simultaneously curtail the power of the people to judge (sic). Under such a system of Government, the spirit of Constitutionalism will no longer exist. The Cabinet is responsible to the Parliament although all laws and mandates are promulgated in the name of the President, Cabinet ministers are required to sign the same. In this lies the true sense of responsibility, and it is this which strengthens the protection of Cabinet Ministers. Now the dismissal of the Premier is a matter of the highest importance but according to new draft Constitution, the dismissal can be effected by a Presidential Mandate without the countersignature of the Cabinet Ministers. It should be remembered that when the Premier is appointed his nomination is first required to be approved by both Houses of Parliament. But his dismissal can be carried out freely by the President, just like the dismissal of a hired servant or a coolie. When the Premier is treated in this manner how can the country and the people expect him to serve them faithfully? Moreover, the sanctity of the approval of both Houses of Parliament of the appointment of the Premier can, according to the draft Constitution, be rendered null and void by a Presidential Mandate. What remains of law? Does this mean to uphold the prestige of Parliament itself?

"As to the provision that resolutions passed by Parliament shall have the same force as law, the despotism of Parliament is clear and pronounced. It is outrageous and seditious in the highest degree. The power of the M.P.'s. to legislate is invested in them by law. Now if all resolutions passed by them be law, then they will be able to add to or reduce from law according to their wish. Parliament would then be little different from the ancient absolute monarchs who used to say "my word is law." Under such a system of Government, all the powers vested in the Government and Judiciary would dwindle into nothing and the appointment and dismissal of all officials of the Government would be made according to the caprice of the members of Parliament. Is it possible to achieve an efficient administration of the Government under such circumstances?

"Furthermore, the manner in which the meetings of the Conference on Constitution have recently been conducted has been specially devilish. Whenever a new article is brought up discussion is forbidden and riotous demands are made for immediate decision. Often as not the three-fourths requirement is not followed and resort is taken to reversion of the question. To expect that a constitution, which should be sacred and inviolable but is hastily made like child-play, can be effective is like deceiving Heaven. Such a constitution, which completely destroys the spirit of a responsible Cabinet, will eventually make all the administrative and judicial officials both in and out of Peking slaves of the members of the Parliament and compel them to obey the manipulation of the M.Ps. in order to satisfy the selfish ambitions and lust of these despotic desperadoes. Originally our country used to be burdened with numerous corruptions resulting from despotic rule. This was why the people were willing to sacrifice their heads and blood and worked heroically to create and build up this Republic. Yet by playing with words they are openly grabbing despotic power. What will the State be if they be allowed to so hold the power of State?

"The points mentioned above are only some of the most glaring ones. Other evils such as harassing the administration and misusing their power are so numerous that they cannot be counted. If we are to recognize the constitution as valid then the country must have sunk down deep into perdition. If the constitution be refused recognition by the people after promulgation, the dangers will be unimaginable. Going to the root of the evil it is because of the defects in the making of the constitution. An examination of the past experience of other countries shows that the making of the constitution should not be left in the hands of the Parliament. If China wishes to have a good constitution there is no other method except to attack the problem at the root. If the whole thing be not completely wiped out, soon the second reading will be completed and

once the text is settled the third reading will only result in alterations in wording. It will then be impossible to alter the spirit of the law. As the Conference on Constitution has the authority to at once promulgate the constitution after the third reading, it will be too late to remedy the matter. If attempts be made forcibly to save the situation grave crisis will arise. We shall then be compelled to either violate law or resort to revolution. We being deeply impressed by what we actually see, cannot permit ourselves to sit quietly waiting for the small number of people, playing with law, to court disaster for the Republic built with immense labour and difficulty. In order to provide for the rainy day it is imperative for us to weigh the question. Compared with ordinary affairs the Parliament is of course more important but compared with the State the State is more important than the Parliament. Since the present Parliament refuses to consider the interest of the nation they have cut themselves off from the people. Their qualification as representatives of the people has therefore automatically ceased to exist. We recall the days when the country was in great excitement when the Temple of Heaven draft of the constitution (the draft constitution now under discussion) was first made known. Our Great President (Li Yuan-hung), while Tutuh of Hupeh, headed the signatories to a telegram bitterly criticising the said draft. [This is a false accusation. It is known beyond doubt that the said telegram was concocted by Yuan Shih-kai and sent to the provinces from Peking and not from Hupeh]. Such wise words and convincing arguments. Praises are sung even to this day. If the members who are discussing the constitution have any conscience at all they should remember these facts. How then could they go even beyond their former attitude? Our only resort is to pray the President that he will weigh the facts and decide boldly. If it is impossible to correct the errors then we ask that the Senate and the House of Representatives be dissolved at once and new ones organized, with a view that the discussion of the constitution may take a new course and the republican form of government be given a permanent protection. Then posterity will thank your excellency for the great benefit thus conferred on them. We being 'rulers of provinces' are vitally connected with the weal and woe of the country. How then can we be backward in looking after the life and death question of the nation. We pray that our words uttered in tears will be listened to by the Great President. In earnest expectation we beg to remain. . . . Meng En-yuan, Wang Chan-yuan, Chang Huai-chin, Tsao Kun, Li Hon-chi, Chao Ti, Ni Shih-chung, Li Hsun, Yen Hsi-shan, Tien Chung-yu, Chiang Yen-hsing and other representatives."

The attitude of the President towards the petition was one of amusement. He was interviewed by many Parliamentarians and to one and all he avowed his intention of doing nothing of an unconstitutional character. Above all he would not in any circumstances dissolve Parliament. This asseveration greatly relieved the threatened members and they took it for granted that the strong stand taken by the President would convince the Premier that no further trifling would be permissible and that he would resign.

The Parliamentarians also sounded various Military Governors and deduced from the conversations that the whole of the Governors are by no means in favor of the adoption of any unconstitutional measures. This indicates that the Premier has not a consolidated military behind him, and without that it would be immediately fatal for him to hazard any bludgeoning of Parliament. Yuan Shih-kai, when he was supreme as President and in command of the Northern military forces, could not succeed, and it is not likely that General Tuan, as Premier, and without solid military backing, can accomplish what his superior failed in. Parliamentarians claim that names of several Tutchuns were attached to the petition quoted above without their consent, and they are convinced that if put to the test many would resist the forcible dissolution of the Houses. It has to be noted that the Tutchuns urge the President to do the deed, and it is surmised that if he refuses they will take no other action, and will not unanimously support any steps which the Premier might desire to take.

In many quarters it is not believed that General Tuan Chi-jui will personally do anything to dissolve Parliament, but time alone will prove that. Suspicion is kept alive in the minds of politicians by his reluctance to abandon the office of Premier,

and while he continues to adhere to it he will be subject to mistrust.

On May 21 rumour was rife that he had made up his mind to retire, and to this end pressure was brought to bear upon him by several prominent Chinese, among them being Mr. Liang Chih-chao.

The Premier Dismissed

Since the above was written a dramatic development of the situation resulted in the dismissal of General Tuan Chi-jui from office as Premier, the decisive step being taken by the President on Wednesday, May 23.

Matters began to come to a head on May 21, when the various Military Governors saw the President and personally urged him to dissolve Parliament. Naturally he bluntly refused. The disappointed military leaders then held a meeting at the residence of the Premier, and as a result a special train was ordered for nine o'clock to take four of them to Hsuehowfu to confer with General Chang Hsun. The Premier himself intended to travel to Tientsin to talk matters over with Hsu Shih-chang, one of the leaders of the military party, one-time Guardian of the Emperor and later Premier under Yuan Shih-kai. The Premier was dissuaded from taking this step, and agreed to remain in Peking pending the result of the visit of the four Governors to Hsuehowfu. It is claimed that General Chang Hsun had that day telegraphed his strong approval of the dissolution of Parliament, but it was necessary to make sure of him, as well as of the Vice-President, General Feng Kuo-chang, at Nanking. Two telegrams were sent to the latter by the Governors urging him to take the lead, but he was slow to make his attitude clear.

Chang Hsun's wire was as follows:

"I am in receipt of your circular telegram urging the Constitutional amendment or, in the alternative, the dissolution of Parliament. I have been all along advocating the dissolution of both Houses, which are altogether unwieldy and incompetent. I have held the belief that their reorganization could not be delayed. I advocated its dissolution at the time Parliament was convened last Autumn. As there are defects in the present Constitution, it is only fair and just for you to propose the dissolution of both the Senate and the House of Representatives. I greatly admire your wise decision, although it is rather a little belated. Whenever you should need my assistance, I shall be only too glad and too willing to give it whole-heartedly. After the President has commented upon your petition advocating the dissolution of Parliament, I shall feel obliged if you will kindly telegraph to me again.

Yours very faithfully,

CHANG HSUN."

* The Tuchuns did not go straight to Hsuehowfu from Peking, but remained at Tientsin during May 22, conferring with Hsu Shih-chang. It was reported that they had decided to telegraph the President and the Provincial authorities again urging the dissolution of Parliament and threatening if this was not done that they would resign. The latter course would prove no loss to China, but as it would involve loss to themselves it is not likely that they will in any circumstances take any step calculated to separate them from their remunerative posts.

Another story, and a probable one, is that the Tuchuns decided to take this opportunity of abolishing the Republic and restoring the Manchu Emperor. This is a scheme near to their hearts. One thing is regarded as certain and that is that General Tuan Chi-jui must have decided upon some course of action in the event of dismissal, seeing that he would not resign, and it is held by his opponents that he is likely to translate his plans into action against the President and Parliament at least.

The departure of the Tuchuns from Peking, ostensibly for Hsuehow to plot against the President and Parliament, determined the former to take matters into his own hand, and on May 22 he had a Mandate drawn up dismissing the Premier from office. Dr. Wu Ting-fang, who had resigned as Minister of Foreign Affairs, but whose resignation was not accepted by the President, was called to the Palace and after the President had outlined the situation he agreed to countersign the Mandate. At the moment when the document was ready General Wang Shih-chen, the Chief of the General Staff, arrived at the Palace. The President informed him of the step he was about to take, and when General Wang urged that the Mandate be held

back in order to give the Premier the opportunity of resigning the President agreed to refrain from acting until the next afternoon. General Wang promptly visited the Premier and as the latter's resignation was not in by noon on May 23 the President issued the following Mandate:

Tuan Chi-jui, Premier and Minister of War, is hereby dismissed from office.

Wu Ting-fang, Minister of Foreign Affairs, is hereby appointed Acting Premier.

Chang Shih-yu, Vice-Minister of War, is hereby appointed temporarily to take charge of the affairs of the Ministry.

Wang Shih-chen is hereby specially appointed Commander-in-chief of the Precautionary Troops in the regions of Peking and Tientsin, and Chiang Chao-tsung (Commander of the Gendarmerie) and Chen Kuang-yuan (Commander of the 12th Division), Deputy Commanders.

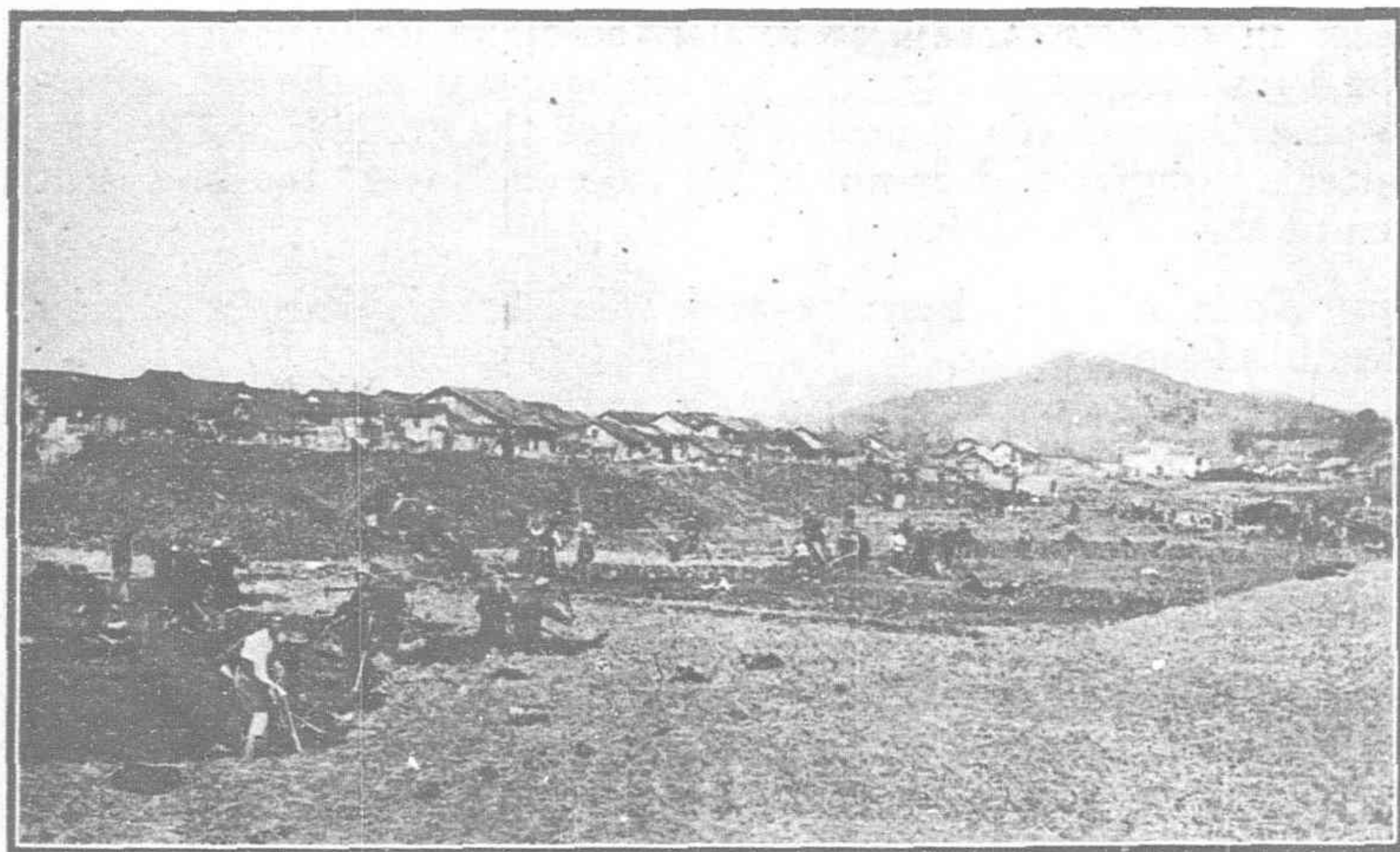
The promulgation of this Mandate caused considerable flurry in Peking, outbreaks being expected, but in foreign circles there was general appreciation of the fact that the President had taken the only course in order to terminate a deadlock which militated not only against good government but against the best interests of the State. The attitude of the President during the previous week or two had given rise to much speculation but his apparent passivity was due to a desire on his part not unduly to press the Premier but rather to give him ample time to "save his face." The Premier for reasons best known to himself, but which the immediate future might disclose, refrained from taking any steps.

After the issue of the Mandate the Premier ordered a special train to be got ready and he left the Capital for Tientsin the same evening.

The President having made repeated declarations that he would not consider any action at variance with China's constitution, he nominated Li Ching-hsi as Premier and sent the name to both houses of Parliament for approval. The lower house approved the nomination by 388 votes to 56, and the Senate by 166 votes to 25. Immediately following this show of unanimity came an announcement through the Chinese press that the Hsuehow conference of military leaders had decided to oppose the formation of a new cabinet by Li Ching-hsi, preferring or demanding instead, that Wang Shih-chen, Chief of the General Staff, be made Premier. This met with instant acceptance from Li Ching-hsi, who is reported to have said that if General Wang would take the job, it was his for the asking. But Wang steadfastly refused and wired the Military leaders at Hsuehow that he could not and would not assume such responsibility. He added his recommendation of Li Ching-hsi as best fitted for the post. According to Chinese press reports the Hsuehow conference then withdrew its opposition to the appointment of Li as Premier.

On May 29, the Chinese newspapers carried a report that the Military Governors of Fengtien and Anhui had declared their independence. Swift on the heels of this came the further and more ominous news that Fukien, Chekiang, Chihli, Shantung and Hupeh also had joined the revolutionary movement and that the Tientsin-Pukow Railway rolling stock had been commandeered for the movement of troops.

Meanwhile, the latest reports from the North were that General Wang Shih-chen had been made acting Premier and General Kiang Chao-chung had been created commander in chief of the forces for the defense of Peking. From Mukden came the alarming news that General Chang Tsao had commandeered the rolling stock of the Peking-Mukden line and was marching on Peking. But this was offset in a measure by the declaration of the commander of the 28th Division, General Feng Ling-kuo, stationed at Mukden, that he would remain loyal to the Central Government. Meantime the Southern revolutionists under Chang Hsun and Ni Shih-chung are reported to have left Pengpu for Tchow in Shantung, the Shantung troops to lead the advance with Anhui coming up in support. The news from Peking is that the capital is expecting a siege and that the Fengtien troops have advanced to Shanhaikwan where the Great Wall comes down to the sea. This is only a half day's journey by train from Peking.



CONSTRUCTING MILITARY HIGHWAY NEAR ICHIAWAN



SURVEYORS AT WORK ON THE NEW ROAD

A STARTLING INNOVATION!

A Chinese Governor Actually Starts Road Building

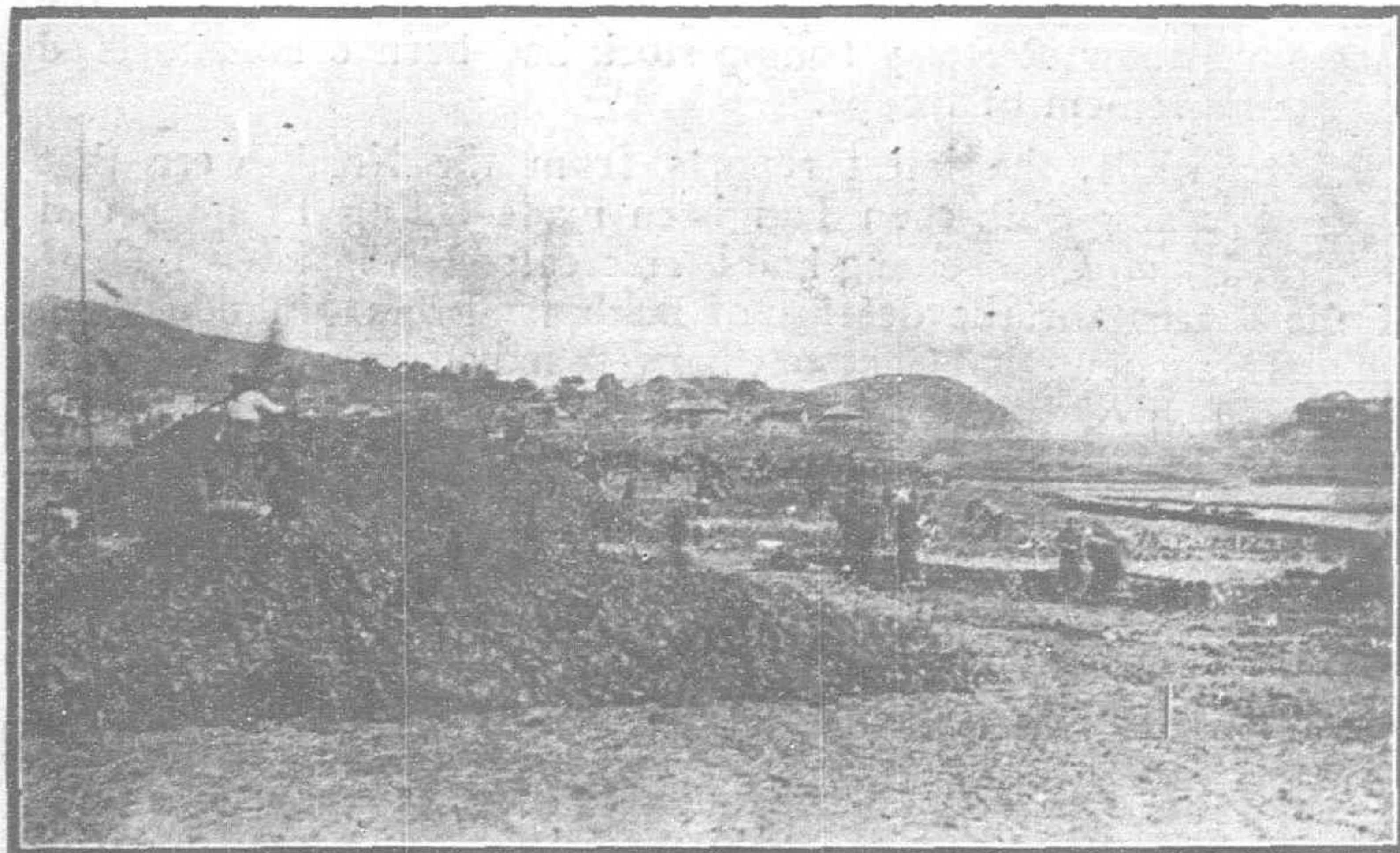
The Military Governor of Hunan Province is building a road! This is something really worthy of chronicle. It is a hopeful sign of progress. In China there are few, if any, made roads, strange as it may seem. Traffic usually wears its own track through wastes or ploughed fields or along beds of streams or on the slopes of foothills. In the rains passage is impossible for carts owing to the depth of the bogs and the intensity of the mud. In the dry season travel is rendered arduous by the dust and the general deplorableness of the bumpy way. Motor driven vehicles are impossible. At all times the strain on horse, or mule, or donkey flesh is terrific. At no times does anyone repair difficult spots—and most of any road is difficult spots which have developed confluence. All roads are deep ruts, and drivers keep to the ruts. Carts from one district cannot traverse the apologies for roads in other districts without altering the gauge of their wheels, for the simple reason that all gauges are not alike and the rut made by the carts of one district determines what the cart from any other district must adopt in the way of gauge. To provide for alterations of this nature some carts are furnished with long enough axles to permit of an immediate widening or narrowing of the wheels, but most carts are compelled to change axles entirely upon entering a section where narrower or wider gauge is the rule. So habituated have carters become to this practice that they see no disadvantages in it. So philosophic are they that they never think of making a general attempt to persuade officialdom to construct and maintain properly designed roads. And officialdom seems to have adopted the convenient motto: Sufficient for

the day is the profit therefrom. If the taxation secured from the people went into roads and other purposes for which it is raised what would the official do for financial pocket lining?

To misapply revenues has been the custom to-date, and as it is recognised as the custom the fact that a road is actually under construction in Hunan is almost startling. Startling because we actually discover an official enlightened enough to realise the value of efficiently constructed roads and courageous enough to defy "old custom" and the wrath of his fellow officials who regard it as treasonable conduct for any of their ilk to do anything for the common weal. We are informed that it is intended to build the road from Changsha to Hengchowfu, and at present work is being done, as illustrated in the photographs, between Ichiawan, north of Chuchow, to Hengchow. When finished the road will be 24 feet wide, both in excavations and embankments, the latter varying in height from two feet to fifty feet. The work is all being done by coolies, the earth being shifted, as is usual, in baskets.

The cost of the earthwork is seven cents (Mexican currency) per cubic yard for embankments up to fifteen feet high; ten cents per cubic yard for embankments from fifteen feet to thirty feet, and fifty cents per cubic yard for solid rock. We mention these prices to show that labor is so cheap that no Governor of any province should hesitate about undertaking similar enterprises. Indeed, as we have often urged, the Central Government should make it a distinct policy to have

(Continued on Page 508)



WORKMEN GETTING DOWN TO GRADE



LABORERS MOVING DEBRIS FROM CUT TO FILL

OPIUM TRAFFIC OFFICIALLY ENDED

Chinese Government May Cancel Contract made with Combine

The last chapter in the stormy history of legitimate foreign opium traffic with China is, rather fittingly, closing with a scandal. The circumstances attendant upon the sale of the opium which the Shanghai and Hongkong Combines had in stock when the prohibition of import went into effect on April 1, and which was purchased by the Chinese Government upon the suggestion of Vice-President Feng Kuo-chang, and with the approval of the Ministry of Finance, have been such that a faction in Parliament and a number of investigators, both official and private, have been moved to protest against the consummation of the deal and to attempt to search out evidence of the corruption and bribery which are rumoured to have figured in the bargaining. It seems almost certain that although the charges which have been brought against high officials in connexion with the purchase of the 2100 remaining chests are not substantiated, the General Government will cancel the contract on one ground or another and that, although no provision was made for such cancellation in the purchase contract which was signed January 28 of this year, the foreign merchants who are collectively known as the Combine, will get little or no compensation, and no support from the British Legation. If this action is taken it will end for all time the legitimate import of foreign opium into China for any but medicinal purposes, as in all Occidental countries, and will leave the Shanghai and Hongkong merchants, who have dealt in the drug to their own great profit, with a large stock of Bengal and Malwa opium on their hands with no alternative but to ship it out of the country. Naturally the whole case has attracted much attention. The Combines, whatever the merits of their case, have had little sympathy but very shrewd legal advice, and have undertaken a vigorous campaign in Chinese and British official circles for the preservation of their interests under the January sale contract, which is threatened by the pressure of public opinion and by the still more vigorous work of the anti-opium propagandists and societies of all nationalities.

The modern history of the opium traffic has been one of slow but certain suppression. In 1906 India exported to China about 51,000 chests of opium, and by an agreement with the Chinese Government made in the following year, the Indian Government promised to reduce the export by one tenth, or 5100 chests, per annum provided that the Chinese did as well in the internal suppression of opium growing and reduced the native output in the same ratio. This reduction China found easier to promise than to effect; but as the suppression was evidently undertaken in all seriousness and carried out as well as local conditions would permit, and as the British Government had turned its back upon a traffic which had never been particularly creditable and had determined to do away with it, the Indian Government abided by its agreement and the imports were reduced as promised.

Result of Conference

As a result of the International Opium Commission which was held in Shanghai in 1909 and at which China was given credit for a sincere desire to stamp out internal opium traffic and to do away with opium using, which had become so prevalent as to be almost universal in some provinces, the British Government by the treaty of May 8, 1911, signed in Peking, agreed among other things to the raising of the opium import tax to T'ls. 350 per chest, to Chinese inspection of export shipments in India, to the total prohibition of import into any provinces which could prove that they were free from native opium, and to an earlier prohibition of import if the Chinese succeeded in doing away with their own opium traffic before the end of the ten year limit. Anti-opium laws were as a consequence stringently enforced in China for a time, but the

disorder attendant upon the revolution of 1911 and later risings disorganized the anti-opium campaign and in spite of the Central Government's best efforts, growers and smugglers carried on a huge traffic, especially in the southern and the northwestern provinces.

In 1915 the Combine pressed for the reopening of the Provinces of Kwangtung, Kiangsu, and Kiangsi, on the ground that the native traffic was still great in these districts, and in recognition of the Government's failure to completely abolish the trade in these areas, Tsai Nai-huang, a special envoy appointed by Yuan Shih-kai, signed an agreement with the Combine by the terms of which the Indian Opium was given access to these three provinces and by which the Combine agreed to pay the Chinese Government an additional \$3,500 on each chest of opium taken out of bond in Shanghai or Hongkong and pledged themselves to supply not less than 6,000 chests. For the signing of this contract Tsai Nai-huang, afterwards executed in Kwangtung, was most severely criticized by all classes which opposed the opium traffic in China; and complications which immediately arose when local officials attempted to prohibit the import and sale of the Indian opium in spite of the agreement, made the Combine anything but a popular institution.

Vice-President Advises Purchase

Throughout the autumn of last year and during the latter months of 1916 the Combine, knowing that the British Government intended to abide by the agreement with China and put an end to the traffic on the 1st of April of this year, carried on a campaign among Chinese officials in an effort to get an extension of the time limit or to have the Chinese Government take over the balance of the stock, estimated at 2,100 chests. The matter was taken up by Vice-President Feng Kuo-chang through inspectors from his *yamen*, whom he sent to Shanghai to look into the opium traffic, and later a report advising the purchase of the stock was submitted to Peking which was considered by the Ministry of Finance, brought before the Cabinet by Minister Chen Chin-tao, and approved by the Government. Thereafter the document was signed by Vice-President Feng Kuo-chang, by Wong Chu-shui, Special Envoy, and by Zee Yao-ling, Civil Governor of Kiangsu.

Immediate criticism was aroused. Parliament objected with fervour and the Cabinet Ministers were summoned to explain themselves. It was pointed out by Minister Chen Chin-tao that the deal did not come under Parliament's supervision as the purchase was made with Internal-loan bonds, and it transpired moreover that the price of T'ls. 8,200 was to be paid in bonds of the first year of the Republic which had depreciated nearly 40 per cent and which, according to report, were being bought up by the Government in anticipation of the deal at their reduced market value. As these bonds were old ones, which, the Minister explained, were left over in the Ministry of Finance, Parliament was not called upon to sanction an issue and therefore had no control over the matter.

In the latter part of February criticism became so pointed and bribery was so freely charged that the Vice-President issued a public statement reviewing the whole case and giving his reasons for entering into the deal. He invited an investigation. In his statement he said that from the beginning he had been opposed to the extension of the time limit, but that in his dealings with the Combine he was embarrassed by Tsai Nai-huang's agreement, which seemed to stipulate that the Combine should be given an opportunity to get rid of 6,000 chests of opium. The Combine insisted, he said, that the Chinese

Government had failed to suppress the growth and sale of opium in the southern provinces, and that the amount of unlicensed opium on the market was so great that it was impossible to dispose of their stock before the end of March. The representatives of the Combine gave him to understand that if the Government did not devise means of taking the stock off their hands, either by giving them an extension of time or by purchasing the opium there would be diplomatic complications and the British Government would take the matter in hand. He thought that by taking over the whole stock all disputes would be obviated and every possibility of an international agreement done away with. He sent delegates to Shanghai to confer with Wong Chu-shwui (otherwise Chih Jui), the Special Envoy, and in September received the Combine's agents in Nanking. He proposed to them that the Government should cancel the \$3500 bonus payable on each chest of opium and that after April 1, 1917, the combine should export whatever stock they had left. To this they would not agree but insisted upon extension of the time limit or purchase. Since the Government could not consider dealing in opium prepared for smoking, it was decided that the stock be purchased for medicine, that it should be prepared under the supervision of Government medical officers, and sold under their direction. The Vice-President telegraphed to President Li and the Cabinet on December 22 explaining how the opium should be used. The eventual purchase price was Tls. 8,200, although the Combine's first figure had been Tls. 9,500 per chest. He had read in the vernacular journals that the price was Tls. 3,000 or 5,700 or 7,000, but all these figures were incorrect. The actual price was Tls. 8,200 and if any one by private arrangement was making a "squeeze" out of the deal he hoped that the matter would be rigorously investigated.

Parliament Discusses Deal

Parliament devoted much time to the discussion of the deal throughout the latter part of February and all of March, and on the 30th of March passed a bill by a big majority instructing the Government to cancel the contract. This prompted the Cabinet to despatch special investigators from the High Procuratorate to make investigations in the hope of finding some irregularity upon which to base the cancellation. Their report was in favor of cancelling the agreement.

Undoubtedly the Chinese believed at first that the Combine would have the support of the British Legation. The Combine's agents took pains to impress this upon Vice-President Feng and in the final clause of the agreement provision was made for the filing of one of the six copies of the document with the British Minister. This however was never filed and it is generally believed that it would not have been accepted had it been filed. When the Chinese discovered in the course of open discussion that the Combine had little if any official support steps towards the cancellation of the sale agreement were undertaken with much more cheer and courage. The Government's decision to cancel the agreement is therefore regarded as final.

Mr. Chang Yi-pang, of the Kao Teng Chien Ch'a Ting, who went to Shanghai to make a final investigation, came back recently with a bewildering array of facts and figures which implicate no one but indicate that there has been a leakage somewhere. He shows that the high market value of opium is not based upon its cost, transportation, or the tax upon it, but upon local speculation, and that the Combine could and did sell, according to their own statement for less than the stipulated Tls 8,200. He says that he has it from the opium merchants that they received Tls 5,700 per chest for the whole stock, though whether this is true or not he is in no position to state.

It is impossible to comment upon the merits of this case. One sees little merit on either side of an opium transaction and the general public in China, both native and foreign,

would be only too happy to see the matter closed. This, there is good reason to believe, was the attitude of Vice-President Feng, who was willing to concede almost anything to have done with the trade. Although the deal was made at his suggestion and the details were arranged by his subordinates no one has seriously believed that he can be implicated in whatever bribery may or may not have been involved. The Combine has earned little sympathy and when the Chinese were talking of settling the whole deal to their credit purchasing the stock and burning it to preserve the Government's good name, it was freely suggested that the Combine which has reaped a harvest of great wealth from the trade, should display its benevolence by making a burnt offering of the drug. How it will be disposed of if the Chinese Government now refuses to take delivery no one knows, but every one feels certain that it were better burned than bought for medicine—which may be interpreted to mean almost anything—and better burned than left in the Combine's possession.

The following is the full text of the agreement signed by the Vice-President, January 28th, of this year, and by the representative of the Combine.

As an interesting historical document, which has laid the groundwork for all the trouble and scandal growing out of the recent purchase, we append Tsai Nai-huang's agreement with the Combine which was signed May 1, 1917 and which has been referred to in the past but not published. The immediate effects of this document were that it cancelled the clause in the British Opium Treaty which provided that the import should cease before 1917 if the Chinese could rid their country of the native culture and traffic, that it reintroduced the legitimate sale of opium into three rich and populous provinces, and that it gave the Combine some ground for insisting that they had a right to sell 6,000 chests of the drug before the expiration of the time limit fixed in the treaty of 1911 or to demand an indemnity, an extension, or Government purchase. An examination of the agreement which follows reveals no such guarantee, but many Chinese were persuaded at the time the purchase was made that it would be so interpreted by both the Combine and the British Legation and that the latter would press for indemnity. In this they have been pleasantly disappointed.

Proclamation by General Feng

Whereas the agreement dated the first day of May, One thousand nine hundred and fifteen and made between the Shanghai and Hongkong Opium Combines of the one part and the special Envoy for the Prohibition of the Sale of Opium in Kiangsu, Kiangse and Kwangtung of the other part provided that Indian Opium paying the contribution therein specified shall be protected but omits to mention any arrangement as to the disposal of the residue of such aforementioned opium after the expiration of the said agreement on the thirty-first day of March, One Thousand Nine Hundred and Seventeen. Now as a measure of fairness to the holders of such opium paying contribution as aforesaid, I, Feng Kuo-Chang, the Tuchun of Kiangsu, hereby declare so far as the Province of Kiangsu is concerned as follows:—

All Indian opium bearing the Chinese Government stamp or certificate as provided in the said agreement affixed before the thirty-first day of March One Thousand Nine Hundred and Seventeen and all persons in possession of such opium shall be protected up to the Thirty-first day of December One Thousand Nine Hundred and Seventeen and no further so that the Treaties made in One Thousand Nine Hundred and Six and in One Thousand Nine Hundred and Eleven between the Chinese Government and the British Government for the prohibition of opium may not be violated in any manner.

Dated the 28th day of January, 1917.

(Sealed FENG KUO-CHANG)

Agreement to Suppress Illicit Sales of Native Opium

THIS AGREEMENT made the first day of May, One Thousand Nine Hundred and Fifteen BETWEEN the persons, firms, and companies who are members of and constitute the SHANGHAI AND HONGKONG OPIUM MERCHANTS COMBINES (hereinafter called "the Combines") of the one part and TSAI NAI-HUANG, the Special Envoy appointed by the Chinese Government by Presidential Mandate, dated the Thirtieth day of April, 1915, for the Prohibition of the Sales of Native Opium in the Provinces of Kiangsu, Kiangsi, and Kwangtung (hereinafter called "the Envoy"), of the other part:

WHEREAS by the Opium Agreement of 1911 between His Britannic Majesty's Government and the Chinese Government Indian opium can be conveyed into any province in China wherein the cultivation and import of native opium have not been effectively suppressed,

AND WHEREAS in the provinces of Kiangsu, Kiangsi, and Kwangtung the cultivation and import of native opium have not been so suppressed,

AND WHEREAS by the laws of China the sale of native opium in any part of China whatsoever is illegal,

AND WHEREAS it has been found that in the said provinces of Kiangsu, Kiangsi, and Kwangtung there is a large illicit trade in native opium, which greatly interferes with the sales of Indian opium therein, thereby preventing the consumption of Indian opium at present stocked in Shanghai and Hongkong, and delaying the total suppression of opium in China,

AND WHEREAS the Combines are the owners of or have under their control 600 chests of Bengal or of Malwa opium, or thereabouts, which are at present stocked in Shanghai and Hongkong,

AND WHEREAS the Combines are desirous of removing the aforesaid interference with the sales of Indian opium in the said provinces of Kiangsu, Kiangsi, and Kwangtung, and are willing and ready of their own free will to make the hereinafter contribution to the Chinese Government towards the expenses incurred in removing the said interference on the terms and subject to the conditions hereinafter contained,

AND WHEREAS the Envoy has at the request of the Combines petitioned the Chinese Government to remove the said interference with the sales of Indian opium in the said provinces of Kiangsu, Kiangsi, and Kwangtung (which the Chinese Government has agreed to do) on the terms, and subject to the conditions, hereinafter contained,

NOW THIS AGREEMENT WITNESSETH that the Combines and the Envoy have mutually agreed as follows:

1.—That the Combines shall make to the Chinese Government a contribution of three thousand five hundred dollars per chest on Indian opium taken delivery of from the Combines in Shanghai or Hongkong during the term of this agreement towards the expenses incurred in the detection and suppression of the illicit sales of native opium in the said provinces of Kiangsu, Kiangsi, and Kwangtung, payable in such amounts and at such times and in such manner as hereinafter mentioned.

2.—The Combines shall pay to the Chinese Government through its duly authorised representative, the Envoy, Tsai Nai-Huang, every Saturday morning during the term of this agreement the amount of contribution hereby agreed to be made on all Indian opium taken delivery of from the Combines during the preceding week since the last payment, provided that the first accumulated payment shall be made one month after the execution of this agreement.

3.—Proper receipts for the said contribution shall be given to the Combines by the Chinese Government through its duly authorised representative, the Envoy as aforesaid.

4.—The Combines hereby guarantee that not less than six thousand chests of Indian opium will be available for delivery during the term of this agreement and that the full amount of

the said contribution shall be paid to the Chinese Government as aforesaid on every chest of the said opium taken delivery of.

5.—The Chinese Government shall be at liberty to apply the said contributions in any manner it shall think fit.

6.—Forty balls of Bengal, and not exceeding one hundred and five catties (Customs scales) of Malwa opium shall respectively constitute one chest of Indian opium.

7.—The said contribution is willingly made by the Combines of their own free will for the sole purpose of assisting the Chinese Government in the detection and suppression of the illicit sales of native opium in the said provinces of Kiangsu, Kiangsi, and Kwangtung, thereby enabling the Indian opium at present stocked in Shanghai and Hongkong to be more speedily disposed of and expediting the total suppression of opium in China, and is not in any wise a tax, duty, or imposition imposed or levied by the Chinese Government.

8.—In the event of any Indian opium at present stocked in Shanghai or Hongkong being sold to Chinese dealer or dealers for conveyance into any of the said provinces of Kiangsu, Kiangsi, and Kwangtung, or any part thereof, the Envoy or his representative shall issue to the Combines a special Government stamp or certificate to be affixed on each ball or packet of opium so sold or any portion thereof, the said stamp or certificate to be affixed in the presence of representatives of the Envoy and the Combines, and the Envoy hereby guarantees on behalf of the Chinese Government that all opium so stamped or certificated will pass all customs or likin houses or stations within the said provinces of Kiangsu, Kiangsi, and Kwangtung without let or hindrance, and that the sellers and purchasers thereof within the said provinces will not in any wise be interfered with by the local authorities of the said provinces.

9.—The Envoy shall, on the execution of this agreement, petition the Chinese Government to order the respective Changchuns and Civil Governors of the said provinces of Kiangsu, Kiangsi, and Kwangtung to take stringent and effective measures for the detection and suppression of the illicit sales of native opium therein with a view to its extinction, thereby enabling the Indian opium at present stocked in Shanghai and Hongkong to be more speedily disposed of, and expediting the total suppression of opium in China, and also to take stringent measures to stop the large quantities of native opium which is now finding its way into Kwangtung, and to suppress the smuggling of illicit foreign opium from Macao and Kwangchowwan.

10.—In the event of any Indian opium so stamped or certificated as aforesaid being detained or confiscated by the customs, likin, or local authorities in any of the said provinces of Kiangsu, Kiangsi, and Kwangtung, the Envoy hereby undertakes on behalf of the Chinese Government to recover the same, and, if the same cannot be recovered, to pay the Combines the then market price thereof.

11.—The Envoy, on behalf of the Chinese Government hereby guarantees that Indian opium so stamped or certificated as aforesaid will be exempt from the "Pao Cheng Chin" (Guarantee Fee) which is at present being levied or imposed in Kwangtung, or any other such imposition by whatever name the same may be designated or called, and also from all such impositions in the provinces of Kiangsu and Kiangsi by whatever names the same may be designated or called.

12.—This agreement shall be in force from the date hereof to the first day of April, 1917.

13.—The Combines shall provide reasonable office accommodation for the use of the Envoy and his staff free of rent.

14.—The Envoy, on behalf of the Chinese Government, hereby guarantees that the said provinces of Kiangsu, Kiangsi, and Kwangtung will not be closed before the first day of April, 1917, unless all the Indian opium at present stocked in Shanghai and Hongkong shall have been exhausted before the said date.

15. In the event of the stamp or certificate so issued as aforesaid not being respected by the customs, likin, or local authorities in any of the said provinces, or proving ineffective, or in the event of the Envoy not recovering any opium which may be detained or confiscated, or his not paying the Combines the then market price of the same if not recovered by him, or in the event of stringent measures not being taken to prevent and suppress illicit trade in native opium in the said provinces, or the smuggling of native or illicit foreign opium into Kwangtung, Kiangsi or Kiangsu on representations being made by the Combines to the Envoy that there is such illicit trade or smuggling, or in the event of any Indian opium as stamped or certificated as aforesaid, not being exempt from the Pao Cheng Chin or any such imposition in the said provinces or in the event of any of the said provinces being closed before the first of April, 1917, then, and in any of the above events, the Combines shall be at liberty to declare this agreement null and void and be released from their obligation hereunder, and in the event of the Combines not paying the said contribution as hereinbefore provided the Envoy shall be at liberty to declare this agreement null and void and be released from his obligation hereunder.

16.—This agreement is to be done in English and Chinese in triplicate, one to be kept by the Combines, one by the Envoy, and one by the Chinese Government for purposes of record.

17.—In case of dispute as to the meaning or construction of this agreement the English text shall prevail,

IN WITNESS WHEREOF the said parties hereto have executed this Agreement the day and year first above written.

Signed, Sealed and Delivered by the above-named COMBINE by their duly authorised and appointed representative and attorney,

ALBERT HOWARD,

In the presence of

A. S. V. WHITE COOPER, Solicitor, Shanghai.

Signed, Sealed and Delivered by the above-named Envoy in the presence of

J. O. ANDERSON,

Barrister-at-law, Shanghai.

The Opium Purchase Agreement

THE AGREEMENT made at Shanghai on the Twenty-eighth day of January, One Thousand Nine Hundred and Seventeen, BETWEEN the SHANGHAI OPIUM COMBINE, of the one part, (hereinafter called "the Combine") and FENG KUO-CHANG, the Tuchun of Kiangsu, ZEE YAO-LING, the Civil Governor of Kiangsu, and WONG CHE-SHWUI, the Special Envoy for the Prohibition of the Sales of Opium in Kiangsu, Kiangsi, and Kwangtung, acting for the Chinese Government of the other part, WHEREAS by an Agreement dated the First day of May, One Thousand Nine Hundred and Fifteen, and made between the Shanghai and Hongkong Opium Combines of the one part and the Special Envoy for the Prohibition of the Sales of Opium in Kiangsu, Kiangsi, and Kwangtung, of the other part, the said Envoy undertook to petition the Chinese Government to take stringent and effective measures for the detection and suppression of the illicit sales of opium with a view to its extinction and enable the said Combine to dispose of their stock of Indian opium legitimately held by them within the period in the said recited agreement specified thus: The thirty-first day of March, one thousand nine hundred and seventeen,

AND WHEREAS owing to unexpected and unavoidable causes the objects of the said recited agreement could not possibly be achieved within the time therein limited,

AND WHEREAS both the Combine and the Chinese Government are anxious to complete the suppression of the opium trade in China and bring it to a speedy end. NOW IT IS HEREBY AGREED as follows:—

1.—The Combine will sell the Chinese Government, and the Chinese Government will purchase from the Combine, the whole residue of the stock of Indian opium remaining in the hands of the Combine on the thirty-first day of March, one thousand nine hundred and seventeen, excluding the stock of opium in Hongkong on the first day of January, one thousand nine hundred and seventeen at eight thousand two hundred taels of Shanghai Sycee per chest, or the equivalent thereof in

Mexican Dollars, according to the rate of exchange ruling on the said thirty-first day of March, one thousand nine hundred and seventeen. The Combine estimates the stock of opium in its possession and control on the first day of January one thousand nine hundred and seventeen, to consist of two thousand and one hundred chests.

2.—The Combine hereby acknowledges that the object of the Chinese Government in purchasing the said opium as aforesaid is for the purpose of securing it for medicinal purposes and not otherwise for gain.

3.—One chest of Malwa opium shall be reckoned to weigh one picul, and one chest of Bengal opium to contain forty balls, in accordance with custom.

4.—The Combine shall continue to pay the Chinese Government the contribution of three thousand five hundred dollars of Mexican Currency on every chest of Indian opium taken delivery of from the Combine in Shanghai in pursuance of the herein-before recited agreement up to the said thirty-first day of March, one thousand nine hundred and seventeen.

5.—Payment for opium purchases under this agreement shall be made by the Chinese Government by means of Chinese Government Bonds guaranteed by the Chinese Government and secured on the revenue derived from the Stamp Duty, out of which, commencing from the first year hereof, a fund not exceeding two million and five hundred thousand dollars shall be annually set aside for the purpose of meeting the obligations hereunder. Nothing herein contained shall be construed in any wise to empower the Combine to have any control over the Stamp Duty, but the Chinese Government is bound to fulfill all stipulations hereunder.

6.—Such bonds shall bear interest at six per cent per annum, payable every half year on every first day of January, and every first day of July, the said interest to accrue from the first day of April, one thousand nine hundred and seventeen.

7.—The amount of Bonds to be issued by the Chinese Government for the purchase of opium as aforesaid shall not exceed Ten Million Taels of Shanghai Sycee—(Taels 10,000,000 S.S.) and shall be redeemable as follows:—Twenty per cent thereof during the sixth year of issue and every succeeding year till the end of the tenth year when they must all be redeemed.

8.—In order to obviate disputes the Chinese Government binds itself not to accept any opium offered by any person or body of persons except the Committee of the Combine.

9.—This agreement is executed in sextuplicate for the file of each of the following parties: The Chinese Government; H.B.M. Minister at Peking; the Tuchun of Kiangsu, the Civil Governor of Kiangsu; Special Envoy for the Prohibition of the Sales of Opium in Kiangsu, Kiangsi, and Kwangtung, and the Chairman of the Shanghai Opium Combine.

IN WITNESS WHEREOF the said parties hereto have executed this agreement.

Signed for and on behalf of the Shanghai Opium Combine,

A. HOWARD

Sealed by

WONG CHU-SHWUI, Special Envoy, etc.

FENG KUO-CHANG, Tuchun of Kiangsu Province.

ZEE YAO-LING, Civil Governor of Kiangsu.

The Method of Payment

SUPPLEMENTARY to the AGREEMENT made between the SHANGHAI OPIUM COMBINE of the one part, and FENG KUO-CHANG, Tuchun of Kiangsu, ZEE YAO-LING, the Civil Governor of Kiangsu, and WONG CHU-SHWUI, the Special Envoy for the Prohibition of the Sales of Opium in Kiangsu, Kiangsi, and Kwangtung, acting for the Chinese Government of the other part, and dated the Twenty-eighth day of January Nineteen Seventeen (hereinafter referred to as the principal agreement). It is hereby mutually agreed and declared as follows:—

1.—Payment for opium purchased by the Chinese Government in pursuance of the principal agreement shall be made by means of Six Per Cent Bonds of the First Year of the Chinese Republic, the issue whereof was authorised by virtue of the law passed by Parliament and duly promulgated by the President on the nineteenth of February in the second year of the Republic in accordance with the Constitution.

2.—Such bonds shall bear interest at six per cent per annum, payable half yearly, and shall be secured and the revenue derived from the tax on Title Deeds for Land, and the Stamp Duty, as provided in the law authorising the issue of the same.

3.—Provided, however, that notwithstanding the period of thirty years limited for the redemption of the said bonds as provided by law all such bonds given by the Chinese Government in payment of opium as aforesaid unless earlier drawn and redeemed shall be paid off not later than ten years from the first of April, nineteen seventeen, out of the proceeds of the sale of the opium for medicinal purposes purchased as aforesaid or from other sources as suits the Chinese Government.

4.—Clauses 5, 6, and 7, of the principal agreement shall be deemed to be amended as far as they are inconsistent with the above provisions but not further. In other respects the principal agreement is hereby confirmed.

Dated the twenty-ninth day of January, one thousand nine hundred and seventeen.

Signed for and on behalf of the SHANGHAI OPIUM COMBINE,

A. HOWARD.

Sealed by

WONG CHU-SHWU, Special Envoy, etc.

FENG KUO-CHANG, Tuchun of Kiangsu Province.

ZEE YAO-LING, Civil Governor of Kiangsu.

THE STAGNANT NATIVE INDUSTRIES OF CHINA

Development and Reform Impossible until Officials Squeeze Less and Learn More

Much has been written by both Chinese and foreigners in China exhorting the Chinese people to the development and modernization of their industries. Much has been done moreover, though it is not very apparent on the face of so vast a country; but wherever development is spoken of or actually undertaken, it is for some reason interpreted as development along strictly Occidental lines; it interests itself in those trades and manufactures which China has in common with the West, and ignores the numerous native industries which are peculiar to China, which are essential to the unchanging life of the Chinese people, and which have an output that goes a great way to swell the volume of Chinese exports. If these industries are considered, the Chinese are prone to turn to substitutes brought from abroad for their raw materials instead of concentrating upon the development of their native resources and the improvement of the native means of manufacture. For instance, if a wealthy Chinese corporation were to consider systematizing the lacquer manufacture, their first step would not be to consider an improvement in means and methods, but to send abroad for information about foreign enamels and imitations, and with these set up a works in competition to the native manufacture and trade. If there is talk of improving indigo growing and the methods in vogue in dyeing establishments, the import of aniline immediately comes up for discussion and in the end indigo is dropped from consideration and the whole venture goes off on a tangent. This tendency, while not strong enough yet in the interior to have any great effect upon native crafts, is not strictly wholesome and would eventually result in a loss of the nation's self sufficiency and the stultification of many native trades and manufactures which, if properly developed within themselves, would not only supply the traditional wants of the people, but would produce a surplus for export. It is however difficult to bring the foreign expert or the Chinese returned student to concentrate upon these things. Ask them to suggest developments in any given district and their minds immediately revert to western models and western tastes and demands. With this prejudice in favour of Occidental models, an expert sent to Kingtehchen to assist in the development and reorganization of the pottery manufacture would immediately plan factories for the making of porcelain bath tubs, porcelain tiles, insulators, and a hundred other things that are made from *kaolin* in the West and ignore all provision for the carrying on of the vast trade in Chinese vases, statuary, bowls, platters, and the like. It seems a perfectly sound economic doctrine that industries should be built up to meet the local demand first and secondly the demands of the export trade and the exotic tastes of the few who have acquired the foreign view point; but it is a doctrine which does not seem to impress the enthusiasts who are busiest in their appeal for modernized industries. As a further

example there is probably not an iron foundry in China running on strictly modern lines which turns out native utensils and tools in the shapes and designs which three-fourths of the Chinese people will insist upon using for the next half century. There would be no need to make crude things, but there is a need to make things which are adapted to native life and the native taste. The returned student, trained in iron founding and milling, will invariably display a great yearning to manufacture steel rails and structural steel while the whole countryside in which he is trying to build up a plant is suffering from a lack of good sound Chinese boilers, picks, shovels, ploughs, shears, simple machinery, and household utensils adapted to local needs.

That China stands in need of industrial development has been asserted by so many authorities that the statement may be assumed to be axiomatic. But the conditions upon which development on any large scale is dependent are an endless chain of "ifs," to which it is well nigh impossible to find a beginning. For instance, the Chinese in remote districts will assure one that if they had a river or a railway, they could assemble raw materials and machinery with which they could build up flourishing manufactures, and if they had these same means of communication they could get many local products to good markets and build up the output enormously. Improved communications are undoubtedly a primary condition to the growth of pretentious manufactures. On the other hand it is extremely difficult to persuade builders of railways and canals to extend communications to remote communities until it has been demonstrated that there are productions and industries which will yield sufficient in freight to make the investment pay in the shortest possible time. Capital is timid, limited, and hungry for large and prompt returns in China, and investments for posterity are not in the Chinese business code. Other native objections which one hears throughout China are manifold. The official tendency to overtax everything that prospers is one of the greatest and most formidable obstacles. The lack of education among craftsmen and petty manufacturers in many rich districts precludes educational campaigns which might inspire them with a knowledge of the needs of their trades and the possibilities of their resources being highly developed. The prejudice against change, which evaporates quickly enough when the value of an innovation has been demonstrated, persists for the lack of demonstrators. Education, a check upon official interference, and improved communications, are all essential to the growth of local manufactures in China, and until these needs are understood by the official classes in China one can do very little by exhorting the Chinese people at large in vague and general terms. If one hopes to do effective commercial missionary work in China he must realize at once that his work should

begin with the vast army of petty officials scattered over the country, who, in spite of the introduction of nominal political changes, still hold the absolute power of guiding and reshaping the collective life of each community to which they are appointed.

A vast number of Chinese magistrates, great and small, against whom no one could bring a charge of extortion, make a systematic practice of throttling everything in the nature of an industry, as they believe, in the interest of the State. The goose that lays the golden eggs is served up to the central government with much eclat as evidence of the small magistrate's interest in the national welfare and diligence in the performance of his duties. A prosperous factory, which advertises its wealth and parades the extent of its influence, is deemed a suitable thing to tax to the very limit and beyond, and is called upon by the magistrate and the community to contribute to every cause and subscribe beyond its means for every local improvement until both profits and capital are exhausted and the plant is forced to close down. The local magistrate who has just imposed a thirty per cent match-tax upon a newly opened match factory will agree with enthusiasm to the proposition that large industries contribute to national wealth because he is sure that if ten more were established in his community he could collect just eleven times as heavy a tax for the benefit of his superior's treasury and his own great credit in the eyes of officials higher up.

If some fund is needed, say in Kwangtung, for a specific purpose, the Peking Government decides with great acumen that it could be raised by public subscription in the province, and it wires to the Governor of Kwangtung: "We have applied to the Ministry of Commerce for a list of the important manufacturers and business men in your province, and we shall send you later the complete list. When you receive this, you can supply the names to the local officials, who will collect subscriptions on the basis of each manufacturer's wealth and remit to you. In this way we believe the fund may readily be raised." As soon as the manufacturers of Kwangtung hear of this communication, ninety per cent of them are afflicted with biting poverty. They discharge their workmen, groan of hard times, close their factories, reshape their accounts, and finally meet the collector with the subscription list with detailed and circumstantial stories of their business failures. As a matter of common decency they must continue to appear poor for some months thereafter, and throughout these months trade is paralyzed and thousands of dependent producers of raw materials, workmen, and small traders are really impoverished and fail to pay the normal taxes which would accrue to the Provincial Government. The same thing happens on a smaller scale in thousands of small communities every year. The man who can do his work comfortably and profitably in a small room in his own house, without too much whirr of machinery or too great a display of the number of his helpers, feels that he is safe from official attention, and would rather go on for the rest of his life doing his work in a small and noiseless way than move into an imposing factory with modern machinery, which the local official and the gentry could see and hear every time they went abroad, if the whole plant were given him gratis.

According to the reports of the Ministry of Agriculture and Commerce, there are now about 25,000 factories scattered throughout China (mostly on the seaboard, however) employing less than four hundred thousand men, and perhaps one hundred and fifty thousand women. Among these 25,000 factories are included thousands of diminutive establishments—two room workshops—which would not be classed as factories in Europe and America, and there are probably no more than a thousand which would compare favorably with similar plants in the Occident. A great number of the native industries, which cater to a purely Chinese market are not represented in the list of 25,000 at all, because they are carried on in little shops too small even for this liberal classification. The bulk of China's manufactured merchandise is made up by families which employ no labour, have no work rooms separate from their living quarters, and employ nothing but the most primitive tools. The manufacture and the transport of such merchandise is accomplished against the most adverse conditions, and the profits to both manufacturer and middleman are so trifling that neither can be expected to improve

his ways and means at his own initiative, even were he aware that improved tools and methods, and manufacture on a larger scale, would yield greater profits.

The study of the whole problem of building up Chinese manufactures and the production of Chinese raw materials, will convince anyone that if there are to be rapid reforms they must begin with the officials and that the Chinese officials must be taught to act as industrial missionaries to the people and as patrons of industry. No one can reform the official system of overtaxing every trade that shows signs of prosperity but the officials. No one else can build railways and canals to meet a future growth of backward manufactures in remote communities: and neither foreign nor foreign-educated industrial experts can be trusted so well as the native official to take an interest in purely Chinese crafts and encourage their expansion.

No one can travel inland without seeing in native efforts to supply the needs of the native community the enormous waste of materials entailed and the heartbreaking expenditure of man and mule power. One sees in Hankow for instance hundreds of boats built every year to go up the Yuan Kiang in western Hunan, by slow and painful stages, and bring back, after some months, small cargoes of the native varnish which is used on boats, umbrellas and the like. These craft, adapted to the rapids, are knocked to pieces when they return and the planks, torn and splintered by the rocks, are sold at auction. Here it is a question of communications. The ingenious devices employed all over China for irrigating the soil are a study in labour and patience with a minimum return and are eloquent testimonials to the value of pumps and dams. The iron pits in Shansi, together with their foundries, are an amazing demonstration of the cheapness of Oriental labour and the dearth of inventive genius among another class which puts endless toil into work which brings a trifling return. Along the Mongol border one will see hundreds of old men and women in a single village spinning woollen yarn in the way it was done 3000 years ago, and one knows that a small machine would do the work of thousands of these poverty stricken ancients. The methods employed in the cloisssonne shops of Peking, in the rug shops of the whole North, in the lacquer shops of Fukien, the fireworks manufactories of Canton, the tobacco presses of Kansu and Shensi, the cotton plantations of the whole Yangtze Valley and part of the North, and in a hundred other centres of native production, are often so painfully crude that they cry out for machinery and organization, but under existing social conditions it is utterly hopeless to appeal to the Chinese people, to talk of either educating or financing them according to their needs, until these needs have been duly impressed upon the official classes and the value of improvements instilled into them. Reform in this phase of Chinese life, as in most others, must begin at the top and go down. This, as it happens, is the secret of Japan's regeneration, and it is the principal condition upon which China's modernization depends.

(Continued from Page 502)

roads built between all the important cities in the country, and the onus for neglect in this direction should fall upon the shoulders of the responsible provincial authorities. At present the Central Government gives awards and decorations—the Silver and the Golden Stork—to tax-collecting officials to encourage them to collect and remit revenue to the Central Government. If this pernicious practice—pernicious because it encourages officials to bleed the people—were abolished and rewards were given for road building and for the establishment of public utilities, something would be done immediately beneficial to the people and of considerable value to the State. And to this end provincial Military Governors should receive instructions to employ the soldiery on road building, a proceeding which probably would automatically bring about the disbandment of many forces, which is so much desired, and at the worst would find some profitable employment for troops who are now nothing but a drain upon the public purse. In the meantime the official responsible for the road in Hunan Province ought to be made the recipient of a specially flowery and ornate Presidential Mandate, if nothing else, commending him for his unusual enterprise.

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PROPOSED IRON MINING LAW FOR CHINA

Development of Chinese iron ores has been under discussion at Peking during the winter and various proposals have been made looking to the erection of furnaces. China must have iron and steel before she can achieve her economic independence and realize her industrial ambitions, but so far there has been much talk without results.

However, the iron ores of the country have been reserved by ministerial order from grant except by special action, and on another page we present a translation of an act prepared recently by the Minister of Agriculture and Commerce, under which it is proposed that development shall hereafter proceed. In considering this bill it will be noticed at once that it runs directly counter to the policy which has been rapidly gaining support throughout the country, and which looks toward retaining the iron ores as a national resource to be developed only as a government monopoly. The arguments for such a policy are set forth in another article in this issue, so that it is not necessary to repeat them. It is sufficient to note that this policy of nationalization, already implied by the reservation of the iron ores from further grant, is widely advocated and is steadily gaining support both in and out of Parliament. All this would be upset if the proposed law be enacted, since under its terms the Minister of Agriculture and Commerce would be authorized to grant permits for prospecting and developing iron mines in China under management either purely commercial, semi-official, or co-operative with the Government. The beautiful ideal of a great national works furnishing the materials essential to China's growth and prosperity, would thus disappear in a welter of small, uneconomical, competing plants, under no uniform management or control.

While yielding to none our preference for opening the broadest field to individual initiative, we recognise that under actual conditions in China nothing short of Governmental control will permit the building up of a strong local iron and steel industry that will still be Chinese. Government control would be all the more important under the proposed law since the bill purposes by most stringent measures to exclude foreign capital from any participation in the business. No one having a sound knowledge of Chinese conditions can believe for a moment that local capital will be forthcoming in amounts sufficient to permit large modern and complete works to be built and operated. It must follow that any plants built by Chinese individuals or companies will be small, uneconomical, and with high operating costs. That, or foreign capital will actually participate though clandestinely. Either would be bad. If China is to manufacture iron and steel it should be done in modern and economical works and if foreign money is necessary the fact should be frankly recognized and proper measures taken to control its investment in industries so essential to the future of China as the making of iron and steel. Regardless of laws to the contrary, money is often invested where ownership is forbidden, but working through an office boy or house boy as a dummy director is not good for either the company or the boy.

On its face the proposed new measure provides in the strictest manner for purely Chinese ownership and control. It only permits employment of technical experts upon approval of the Minister of Agriculture and Commerce, and the same person is given authority over sale of iron to foreign countries. We can quite understand how a patriotic Chinese seeing native iron ores slipping into the hands of foreigners, some of whom may become unfriendly rivals in business and politics, would write into such a bill every measure designed to keep control at home. Unfortunately the wording does not carry out this purpose. What would actually be accomplished by the act would be to place in the hands of one man authority to contract away a great national resource. It is true that it is proposed that no agreement is to be made to sell to foreign countries "until the actual production of iron ore," but these terms are open to several interpretations and there is nothing to prevent an agreement that becomes operative as ore is produced. Our staff writer states clearly in the article to which we have already referred, that the amount of iron ore in China available for

modern development is much less than has been generally supposed. Since numerous deposits have been already granted, or the iron from them contracted away, there is all the more reason for making sure that the remainder be held for development in China. The only way to do this certainly is by thorough-going nationalization. This the proposed bill will not accomplish. Indeed it will serve no useful purpose that we can conceive and will merely complicate the situation by leading to promotion of native companies which can not possibly succeed in business. The provision requiring submission of existing contracts for approval is *ex post facto* legislation which will certainly make trouble with foreign governments who, not unnaturally, will insist on any contract already made being fulfilled. The proposed additional tax is unfortunate since the taxes on minerals are already so high as to be burdensome, amounting in the aggregate according to careful study to an effective 10 per cent. In lieu of this the Government should reserve a share of the profits and we are convinced that on such a basis a much larger public revenue can be secured at the same time that development is stimulated rather than hindered.

Probably the most fundamental objection to the proposed law, as also to the general mining law, speaking from the point of view of an investor, is the minuteness and at the same time indefiniteness of the control proposed to be exercised on behalf of the Government. Too much authority without definition or restriction, is lodged in the Minister of Commerce and Agriculture. Anyone attempting development would be wholly at sea as to conditions under which he might have to operate and the record of Ministers at Peking is not such as to make that an attractive prospect. The Ministers change rapidly and they are not always guided by the advice of competent subordinates even when they are present, as happens to be true in several branches of the Ministry of Agriculture and Commerce which is concerned with mines. As an example of what is possible we may cite estimates for Government Iron Works prepared by the same Minister within a few weeks. In a plan submitted it was proposed to build, on borrowed money, two works; one near Tongshan in Chihli and a second near Nanking in Kiangsu. The former was to treat 200 and the second 500 tons of iron ore per day. Only pig iron was to be made, regardless of the fact that this must be converted into steel and rolled into rails, plates, or other shapes before it becomes useful. It was proposed to buy the coke so that only iron mines and blast furnaces were concerned. As a matter of fact neither of the proposed plants, built for the output stated, would be large enough to constitute an economic unit, and the two together would not produce as much as one modern blast furnace. Nevertheless, the estimates called for expenditures amounting to Tls. 13,255,000. This is approximately three times as much as would be necessary to build a 500 ton furnace in the United States—the land of high prices—whereas the two furnaces together would probably not have yielded more than 350 to 400 tons per day. Even had the money been expended and the plants built as outlined, operating costs would have been prohibitive and the product, pig iron, aside from the small part needed for foundry purposes, could only have been sold abroad for conversion into steel which might feed the industries of other countries, thereby giving the main profit to the country in which the manufacturing was done. Evidently the Government needs technical knowledge quite as much as money if it is to guide the development of the much needed iron and steel industry.

THE PLAGUE OF SECRET TREATIES

Chinese diplomatists, speaking for publication, are very prone to dwell upon their nation's weakness, her reliance upon the good-will of America and the major European Powers in seasons of stress, and the blessing of the "balance of power." The number of secret treaties, concessions, and contracts which have come to light during the past few months, mostly in connexion with the expansion of American interest in China, reveals a most dangerous tendency on the part of these same diplomats, who

are so solicitous for China's territorial integrity and her freedom of action under the wing of the Occidental nations as a group, to circumscribe by secret arrangements, upon which the family of nations has no check, Chinese liberty of action and also fair commercial competition among foreigners in China. Nothing could be more discouraging to the disinterested foreigners in China who sympathize with the efforts of the Chinese people to maintain their independence at times when one foreign power or another becomes aggressive and registers demands or wishes which threaten to subvert Chinese liberties, than this secret concession of special rights in documents which are not subjected to the wholesome test of publicity.

Secret treaties of an embarrassing nature have cropped up from time to time throughout China's history, but the arrangements which have been brought to light in the past few months have been particularly discouraging to American business men because they have affected them most directly and from the Chinese point of view the revelations which have been made are most untimely; for China has been pleading hard for American sympathy and support and America has just begun to take an interest and respond. The Chinese who sincerely hope for American assistance in the development of the country and who also hope to see a more vigorous diplomatic support of American commercial enterprises in the Far East, would regard it as a real catastrophe if this budding American interest in China's affairs were destroyed by the adverse conditions which a series of compromising secret treaties might reveal. The Chinese government has always groaned under the restrictions which published treaties and agreements have placed upon the nation's international dealings, but the heads of a state which bargains away in secret the rights which its friends are asked to protect cannot look for much sympathy nor expect any support in the recovery of its political integrity if it is once lost through these covert dickerings.

The most conspicuously unfair arrangement which has come to light for some time is that with a Japanese firm, which is reported in detail by the *Peking Daily News* and is reprinted in this issue. The truth of this report is also confirmed in official quarters. The Ministry of Communications wishing to buy electrical supplies for the telephone and telegraph services, called for tenders for a large contract on May 7 of this year. Of the several bids made was that of an American firm, which had entered its tender in all good faith believing that the contract would be awarded to the lowest reputable bidder, and had spent some months preparing its tender, which the prospect of America's declaration of war upon Germany made peculiarly difficult. Its bids on supplies, which were to have been furnished the Chinese Government during the next two years, were lower than those of any other firm and according to the rules which govern such deals in China as well as elsewhere, this firm should have been awarded the contract. The contract however was not awarded to anyone, but a secret agreement with the Japanese firm was brought forth in which it was stipulated, to the surprise and indignation of the other bidders, that the Japanese alone were to be given a chance to make a second bid after the offers of their rivals had come in and had been made public. The Japanese at once set about preparing a second bid but protests have been strong from many quarters and it seems possible now that the secret arrangement, which was a clause appended to a loan agreement, will be ruled out and that the contract will be awarded to the American firm.

This is an instance of an awkward situation brought about by a clandestine arrangement with a private concern. No less awkward, and much more difficult to evade or to cancel by protest, are the secret international arrangements which American railway builders have brought to light in their search for a part of China in which to build a railway without conflicting with the special concessions or guaranteed privileges of other nations. Concessions by treaty and dormant contracts with foreign companies which for one reason or another are not developing their concessions, cover the whole map of China as it is, and the American investors whose contract for railway building in China is being handled by the Siems-Carey Railway and Canal Company found it difficult enough at the start to plot out on paper eleven hundred miles of line which would not compete with or infringe upon the concessions already staked out by published agreements. But when the actual work of survey was about to be undertaken

this past winter they suddenly became aware that their difficulties were about to be doubled by the unforeseen objections of certain Powers, some of which had entered into arrangements with China of one sort or another. Some of these objections were based upon published agreements and others were supported by quotations from secret documents, which first made the railway builders realize that they were working largely in the dark and that the only way to find out what corner of China had not been leased, sold, or mortgaged, was to lay out possible lines in various parts of the country and then sit back and wait for the protests to come into the Chinese Foreign Office.

The line that was planned to run north and south through Kwangsi Province was, for instance, believed to be free from international restrictions, but after the surveyors had been in the field for some time the French Legation quoted to the Chinese Government in support of a protest, a secret agreement in the form of an unpublished exchange of notes in which the French are promised that if capital is required for the development of mines or railways in Kwangsi they will be given the first opportunity to supply it. The note which was written by Sun Pao Chi, Minister of Foreign Affairs in 1914, was quoted in last month's issue of the FAR EASTERN REVIEW.

In much the same way the Russian Legation supported a protest against the construction of a line from Fengchen in Shansi to Ninghsia in Kansu by quoting clauses from a secret treaty of 1898, which is said to guarantee to the Russian Government that if a railway is to be built towards the Russian border, or if a line is to be built which might compete with such a railway, Russia will be given the first opportunity to raise the funds for construction—in case, of course, the Chinese cannot do it themselves.

Directly opposed as all of these secret arrangements are to the principle of equal opportunity which has hitherto been America's only Far Eastern Policy, they are decidedly unfair and are certainly discouraging to the American investors and the prospective investors who are putting their money into China in response to what they believe to be China's cordial and eager invitations. While one official in China busies himself with interesting foreign capital and encouraging Americans particularly to enter into competition with other nations in the Orient commercially, it would seem that there is always some other official who is busy forging new locks and chains for the "open door", by peddling out special rights to individuals and nations in secret agreements against which the Chinese people and their foreign sympathizers, kept carefully in ignorance by the short-sighted and foolish heads of the Government, are powerless to protest. China grants special privileges and locks out competition, at the same time publicly setting a high valuation upon the "balance of power" and the doctrine of equal opportunity, and then cries for sympathy and support from the people or peoples whom she has locked out most effectually and has made almost powerless to assist her through legitimate commercial channels.

Besides these agreements, notes, treaties and the like which throttle commerce and handicap development, one hears from time to time of secret political treaties, and in view of the awkward and short-sighted commercial arrangements made, it is easy to believe that China may be entering upon almost any sort of a political treaty with almost any power and upon almost any terms in secret. For this reason a great deal of credence has been given the recent rumour of a secret Sino-Japanese loan and treaty upon which it is said that the Premier, Tuan Chi-jui, and the Terauchi Government in Japan are entering, and which, if true in the reported details, amounts to little less than the sale of all China to the Japanese.

According to the reports which appear in Peking journals and which are vouched for by officials who belong to the political faction opposed to the Tuan Chi-jui Ministry, the Japanese Government has agreed to lend China 100 million yen for the creation of a Chinese army and for the building of arsenals, in the direction of which the Japanese will have a part. As the opponents of the Government point out, this agreement, if true, will put all of China's military forces and her munition supply at the disposal of the Japanese Government for an indefinite period, and will bring China under the direct political tutelage of

Japan. Against just this concession of military control Yuan Shih-kai opposed all his strength at the time that the Japanese Demands were made in 1915, and for the tremendous service which he did China at that critical time he has been given full credit by his bitterest enemies. The Chinese have seemed to regard the possibility of a Japanese control of the army, the arsenals, and the military schools, as a promise of their complete subjection to Japanese control, and to have had a wholesome horror of any arrangement which would tend to bring about such conditions, yet, if the rumoured loan is contracted and the secret treaty signed according to the terms which have been published in the Peking papers, Japan will at one quiet stroke have effected a conquest in China more complete and far reaching than anything asked for or hoped for at the season of the Demands in 1915, and nothing but the strongest pressure from the European nations, which are now very loth to interfere in any way with Japan, can possibly undo the mischief and free China from Japanese military dictation. Under the present circumstances the best that anyone can do is to hope that the report is either exaggerated or false, but the treaty revelations of the past six months have made all things seem possible. There is apparently no limit to the folly and criminal blindness of Chinese officials when they come to deal in secret documents, and no legitimate check which can be put upon them by the Occidental peoples whom they are constantly summoning to their aid in their periods of worry and distress.

THE TRANSPORTATION PROBLEM IN CHINA

Nowhere in the world to-day is there a more crying need for transportation facilities than in China. Although boasting the oldest civilization of the world, China is farthest behind in the onward march of civilization in this particular respect. But the reasons for such a condition are not difficult to understand when we consider that the new Republic is only just emerging from the shadows of an ancient reign filled with superstition, arrogance, and utter indifference to the general welfare of the people, into the light of modern progress and development. Already a great work has been accomplished in throwing off the yoke of the Manchus, and the men of China—those patriots who brought this about—are to be congratulated upon their great success. It was an undertaking of vast proportions—long dreamed of, but filled with so many obstacles that it seemed well nigh hopeless and impossible of fulfillment. But the work is far from finished, in fact it is not fairly begun; for it is of the greatest importance and of the utmost urgency that the new Republic of China be provided with the means for developing its important natural resources, and likewise with the means of protecting the country from dangers within and without.

For thousands of years the four hundred millions of Chinese have lived virtually by agriculture—and many there were who starved—while untold mineral wealth lay untouched and undeveloped throughout many sections of the country—gold and silver and other minerals far exceeding even the dreams of avarice.

While mining is carried on at the present time in various sections of the interior in a crude and inefficient manner, due to the lack of transportation facilities, there is no question but that these mines can be made to produce large fortunes, from which not only the owners of the mines but also the Government and the people at large would profit, if only transportation facilities were available. At present the product of such mines is usually carried by coolies overland for a considerable distance until a stream is reached, whence shipments are made by boats. The long distance practically shuts off these mines from the outside world with the result that only a small amount of the product ever reaches the market. There is no doubt but that the mineral resources of China are very great but until such time as adequate means of transportation are provided, this great potential wealth of the nation will remain locked up and be of no value to the nation.

It has often been stated that labor is cheap in China, and so it is, but even with the cheap price of labor the present cost of transportation by coolies in many Provinces varies from three to ten times the cost of transportation by railroad under similar conditions elsewhere.

In addition to the mineral resources, means of transportation would result in greater development of the agricultural resources as well as in the manufacture of numerous products by modern methods, thereby building up the country along these lines.

Moreover, the construction of railroads will result in bringing the people of the various Provinces closer together, making each Province an integral part of the Republic in closer touch with the Central Government and more responsive to its national needs and duties.

The development of the great natural resources of China is second only in importance to the maintenance of the honor and peace of the nation.

From a military standpoint, the future peace and prosperity of this great nation absolutely requires an efficient and comprehensive transportation system through which the military strength of China may be made available for national defense in time of national peril. And, in these days of world-war, it is fitting that thoughtful consideration be given to the subject of national defense.

With a modern transportation system, intelligently planned and well constructed, so as to serve all the Provinces of the Republic, it would be possible for the Central Government to mobilize an army within a short space of time on the East coast or on the South coast, or wherever the exigency might require, and to protect the nation from foreign aggressions or to suppress internal disorders. It would be of immense advantage to the Central Government, in any crisis, to have the prompt support of those great Provinces which are now without adequate transportation facilities, and to be able to despatch troops quickly to or from such Provinces as the circumstances might require. China is to-day reorganizing her army and many of the troops in the interior are well drilled and well organized, but on account of lack of railways and roads such troops could be of little value if urgently needed on the Eastern or Southern coasts, on account of the time which would be required, under present conditions, for these troops to reach the coast. At least one Province is even now spending large sums of money in construction of military roads for this very purpose of facilitating the movement of troops, but under modern conditions such roads will be of little use from a military standpoint, on account of the great distance which these troops would be compelled to travel by foot. The Central Government at Peking will never have the strength which it should have until each and every Province of the Republic is provided with transportation facilities.

The Yaloshan University, situated on the opposite side of the Siang River from Changsha in the Province of Hunan, is reputed to be the oldest University in the world, having had a continuous existence for over 1,000 years. At the entrance of this ancient college, there is a great marble tablet, placed there by Chinese patriots, where the youth of the country may read and ponder well each day as they go to their studies, the remarkable inscription engraven thereon in Chinese characters. Beginning with expressions of deep humility, this tablet tells the story of the wrongs and oppressions suffered by China at the hands of the various foreign Governments, and it recalls:

The Opium War in which Great Britain seized Hongkong;
The taking of Indo-China by France;
The seizing of Korea by Japan;
The taking of Port Arthur by Russia;

and so on down the list, detailing each bitter humiliation which China has suffered. There is only one great nation whose name is conspicuous by reason of its absence. Thus is the lesson burned into the very hearts and souls of the youth of Hunan. And there were days when it was exceedingly dangerous for a foreigner to even pass this ancient seat of learning.

The message which the Yaloshan tablet carries to the mind of very loyal progressive Chinese is that the Republic must be developed, and that the nation must be placed in position where

such humiliations may never again be suffered, and the most important factor in such development at this stage of the country's progress is the building of railroads, which, in opening up the vast mineral deposits, will create new wealth which will flow into the Government coffers, making it possible to establish and maintain a strong, effective army and navy for the protection and defense of the Republic. For the development of her great natural resources would unquestionably mean the creation of new wealth, whereby an army and navy might be equipped and maintained according to modern standards of efficiency.

With the building of these great arteries of commerce, which have long been planned and long delayed, a new day will dawn for China. It is for those in authority and the young men to realize the wonderful opportunity which is theirs to develop this vast country and to make China one of the greatest nations on the face of the globe.

As regards finances: comparing the outstanding indebtedness of the Central Government of China to-day with that of America and Japan, according to Mr. Crawford M. Bishop, former United States Vice-Consul in China, we have:

Country.	Population.	Debt.	Debt per Capita.
<i>United States.</i>	95,411,000	\$1,026,686,026	\$10.76
<i>Japan.</i>	52,312,000	1,251,316,800	23.92
<i>China.</i>	400,000,000	836,947,410	2.08

Comparing the same countries with respect to annual revenue, annual expenditure and debt charge, we have:

Country	<i>United States.</i>	<i>Japan.</i>	<i>China.</i>
Revenue	\$992,249,000	\$322,024,080	\$235,973,355
Expenditure	965,274,000	286,833,930	235,973,355
Revenue per Capita .	\$10.40	\$6.16	\$0.58
Expenditure per Capita.	10.12	5.48	0.58
Annual Debt Charge.	\$22,616,000	\$72,134,370	\$59,841,860
Charge per Capita ..	\$0.24	\$1.38	\$0.14
Per Cent of Debt Charge to Expenditure.	2%	25%	20%

The Government Railways of China have not only met the annual charges for interest and amortization, amounting to \$8,949,575 gold in 1916, but have returned a net surplus to the Government of over \$4,000,000 gold in 1915, and of over \$5,000,000 gold in 1916.

As regards future earning capacity, the report of the auditing bureau for the six months ended June 30th, 1915, says: "A study of the reports of the several lines now in operation, combined with what is common knowledge of the general industrial situation, warrants the confident expectation of a successful future for railway enterprise in China.

"Most, if not all, of the lines which show a loss will become profitable lines as soon as the systems of which they are the links shall have been completed. Provision for through traffic has also begun, and this when fully established will increase earnings. It requires only a judicious selection of location for new construction, and a business administration of the lines when taken over for operation, to enable the railways of China to show results equal to those of the most favored railways of the world."

At present there are only fifteen lines of railroad, aggregating 6,467 miles, in all of China—a country considerably larger than the whole of Europe. This is an average of only three-tenths of one mile of line for each 100 square miles of territory.

YOUNG MEN AND YOUNG WOMEN OF THE ORIENT

On another page is illustrated the new building of the Young Men's Christian Association of Yokohama, opened last October. Then the Association had only 400 members. Now it has 1,100. Such is the effect of an adequate plant in spreading the Christian civilization of the West among the peoples of the Orient, for the same effect has been noted in Shanghai, Peking, and in fact every other city of the Far East in which the Association is actively at work. Membership is only one index of the development of the influence of the Y. M.

C. A., although it is naturally the one first to be observed. The other and much more to be desired effects become apparent year by year, sometimes as an almost imperceptible progress, but still a progress, toward higher levels of life and thought. It is one of the latter effects and its bearing on the world's future that is here to be considered,—the question of the influence of the kindred young men's and young women's associations on that one great menacing feature of Eastern life, the plural marriage and its attendant evils.

The FAR EASTERN REVIEW has pointed out from time to time, perhaps none too gently, the menace to the world of the "man making mania" of the Oriental. When one considers that the white people in the world to-day total less than one-third of the population and that the Caucasian is doubling in numbers once in a hundred years, and that on the other hand, the Oriental and dark-skinned races which now are 66 percent of the world's population are doubling their numbers every 25 years—such at least is the case in Korea—it does not take much of a mathematician to see that in 100 years the Caucasian element will have shrunk to scarcely five percent. All because the Oriental demands men children and as many of them as he can produce. What their lot in life may be, whether they live or die after their first man child is born, that does not enter into the Oriental scheme of things at all.

Therefore it would seem that the Caucasian must take thought to the morrow, even though the day of his extinction as a world factor may appear so remote as one, two or perhaps five centuries away. How best to restrict the over-populating of the world and the increase of mouths that must be fed far beyond the capacity of the earth to produce, therefore, is a vital question. The answer is universal monogamy, but it is not so much the answer as the means whereby it may be brought about that is of importance. And here is where the two associations, for young men and young women, come into play.

And that of the two, the Young Women's Christian Association some day will be the greater and more powerful factor in bringing this great desideratum about seems without question. Give a man higher standards and he naturally looks for a helpmeet who can enjoy the better things of life with him. He will turn unerringly to the woman who has had a training similar to his own and will pass by those whose experience and ideas are utterly out of accord with the new thoughts that Western education has brought into his mind. As things are now, the Oriental man—be he Japanese, Chinese, Turk or Polynesian—is privileged to have and hold as many women as he can support. And as a general thing the more wives he has the easier it becomes for him to be supported since a wife asks no salary but is willing to work her fingers to the bone for food and clothing and a roof over her head. Her status, even though she be a secondary, tertiary or even a tenth wife, is superior to that of the unmarried woman in that she has the protection of a husband or a tenth of one at least.

So long as the Oriental man is able to arrogate to himself the right to possess plural wives, just so long will polygamy prevail. But there is a way out and one which is becoming broader and more easy to tread each year. Easier for the new woman at least, for marriages among the returned girl students take place soon after they reach China again and scarcely one nuptial contract is drawn between two foreign educated Chinese that does not contain an agreement, either in black and white or tacit at least, that this wife shall be the only wife so long as she shall live. The wife with foreign education is a precious thing in China in the eyes of the returned students since she is one of a few women of his own race that realizes and understands his peculiar aspirations. Rubies are as nothing compared to her, and her slightest pre-nuptial wish is law. She has it in her hands to be the one and only wife and if the few examples that have come under the writer's notice are any criterion, she will exert that power to the uttermost.

Somehow the education in Christian thought and ideals that is furnished by the Associations seems to strike more deeply into the hearts and minds of the women than those of the men. The latter sometimes—often perhaps—lapse into olden ways, but the women never. The virus of western thought, for such the uninitiated esteem it, seems to become a part of the root fibres of the woman and remains with her for life. This being the case, and also admitting that it is to the interest of the woman rather than the man to abolish the plural marriage, it

certainly follows that education of the Oriental woman will have far greater power for shaping the destiny of the Eastern races into Western moulds so far as monogamy is concerned.

Therefore it behooves those who are working and contributing toward the uplift of the men through the Young Men's Christian Association, not to forget the Young Women but to see to it that where one dollar is given to uplift the men two dollars be given to those whose work lies among the women. The hand that rocks the cradle adage is just as true in the East as in the West and the shaping of the immature minds of the young is the work of the mother here as everywhere else. Indubitably, the influence of the woman in overthrowing the one factor that makes the Oriental a race apart is double that of the man and she should be aided accordingly. They are the fertile ground that has no tares nor stony ground to choke or wither the good seed once it is planted, and to paraphrase the immortal Terence Mulvaney, "catch them young enough and educate them high enough and its not continental armies but age-long customs they'll be smashing" to the everlasting benefit of countless generations yet to come.

EDITOR ARRESTED, TRIED IN SECRET AND IMPRISONED

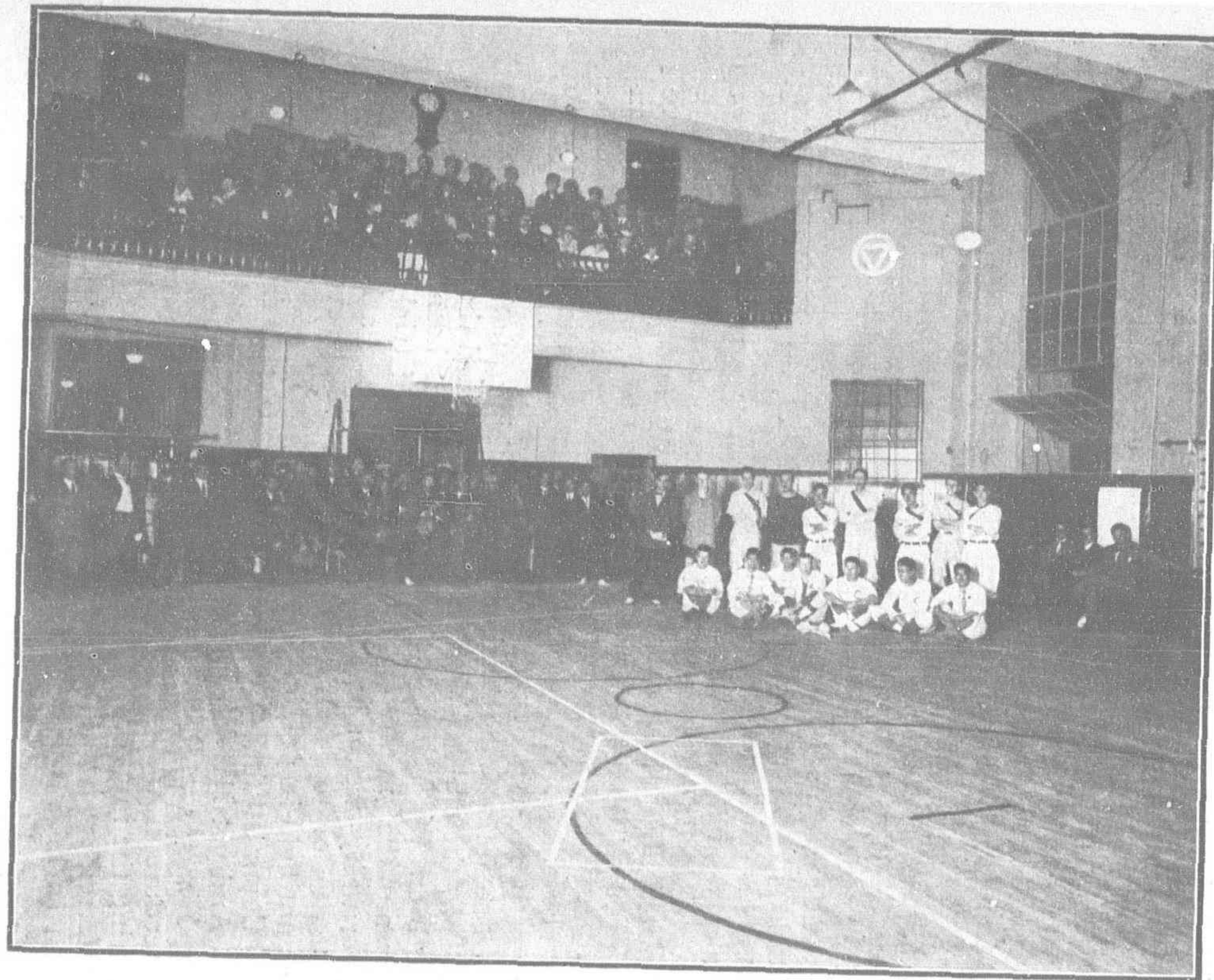
The arrest was effected on May 19, at 2.30 a.m., of Mr. Eugene Chen, Chinese Editor of the *Peking Gazette*, following a series of violent attacks upon the Government. It is reported that the Court officials are subjecting the arrested man to gross hardships not consonant with justice, and it is to be hoped that higher authorities will see to it that scrupulous care is taken not only properly to treat the prisoner but also to give him strict fairness in trial. In the last issue of the *Review* we commented upon what we took to be encouraging signs of a wider freedom for the press and we hope we will not have to revise that impression. While we do not for a moment wish to suggest that the action of the authorities in arresting the Editor of the *Gazette* is wrong, we feel that unless he is treated properly, is accorded facilities for preparing his defence, and his trial is open and fair the authorities will stand condemned, and will simply add one more reason to the many for the refusal of foreign nations even to consider the question of the abandonment of extraterritoriality. At present Dr. Chen Chin-tao, ex-Minister of Finance, continues to be disgracefully treated, a fact which does not improve the estimation in which the present Premier, who is responsible for it, is held.

Since the above was written, events have moved rapidly in the case of the editor, if not in that of the imprisoned Minister of Finance. Mr. Chen was granted an interview with some of his staff, and although this lasted only ten minutes it was thought by his associates that it marked the beginning of a change in his treatment by the powers that be. Efforts had been made daily to secure his release on bail, but every attempt was defeated on one ultra legal excuse or another. All the requirements in the matter of security and bondsmen were complied with and on one day from noon to 5 p.m., a bondsman was kept waiting at the Court premises while the application was submitted. No decision was given and the matter had to be postponed two days.

The following morning, when making another application for bail, the editor's associates were informed that the case had just been tried and that Mr. Chen had been sentenced to four months' imprisonment. No notice of trial was given, no opportunity was afforded Mr. Chen to see a lawyer, to call witnesses or to produce any evidence whatsoever. The trial was not held in public.

Commenting editorially the *Peking Gazette* says:—

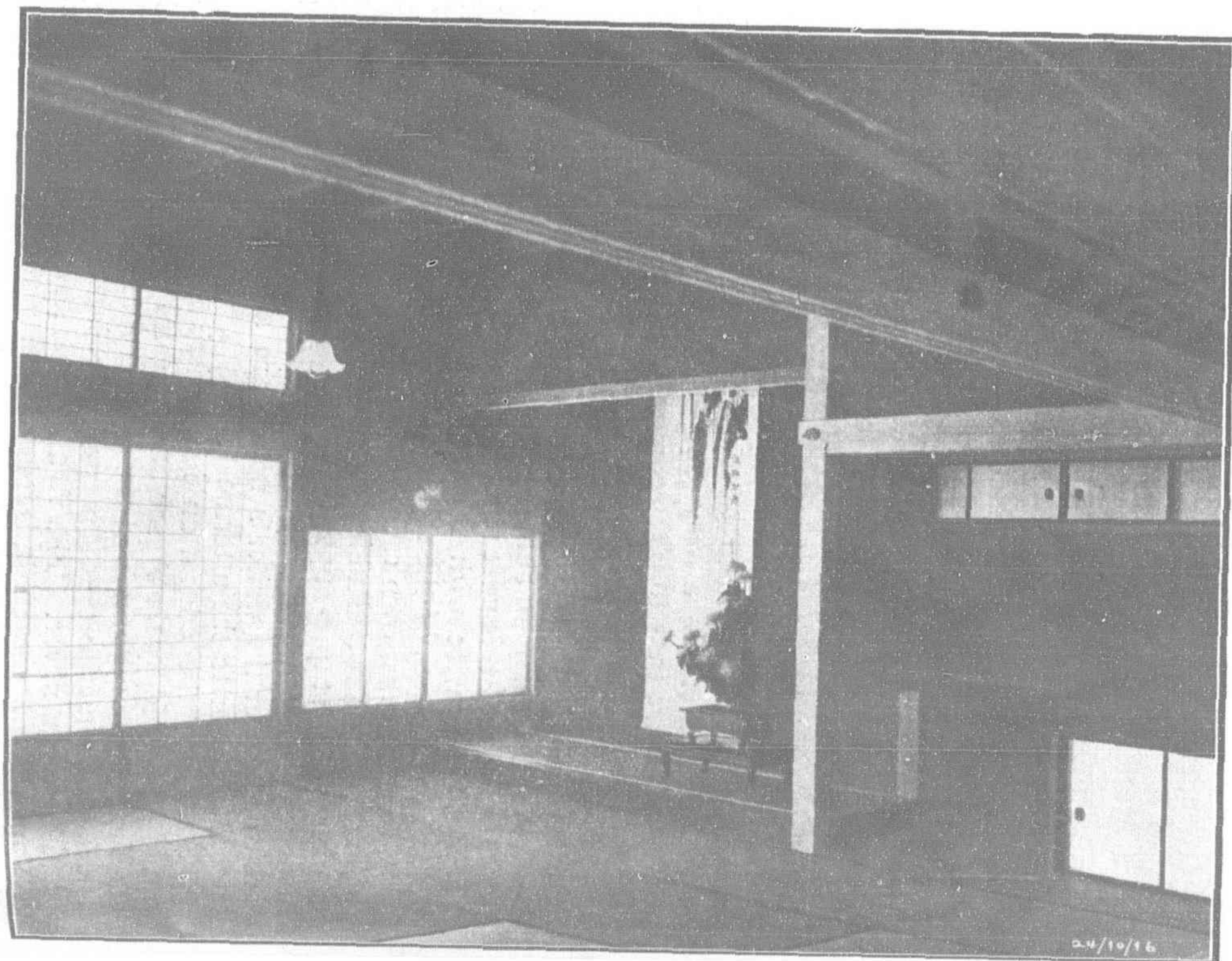
And yet Mr. W. R. Giles, the correspondent of the *Tientsin Times*, was last week authoritatively "informed that the procedure now being adopted followed European precedents. During the investigation of the serious charges which have been preferred against him he will be allowed to see no one, but as soon as he is to be brought up for trial he will be allowed to employ lawyers and every opportunity will be given him to defend himself. He is to be tried by a court of five judges and the trial is to be an open one. The public, both Chinese and foreign, will be allowed to attend."



EXHIBITION OF INDOOR BASEBALL IN THE GYMNASIUM



THE GYMNASIUM WITH SEATS PLACED FOR USE AS AN AUDITORIUM



YOKOHAMA Y.M.C.A. IN NEW QUARTERS

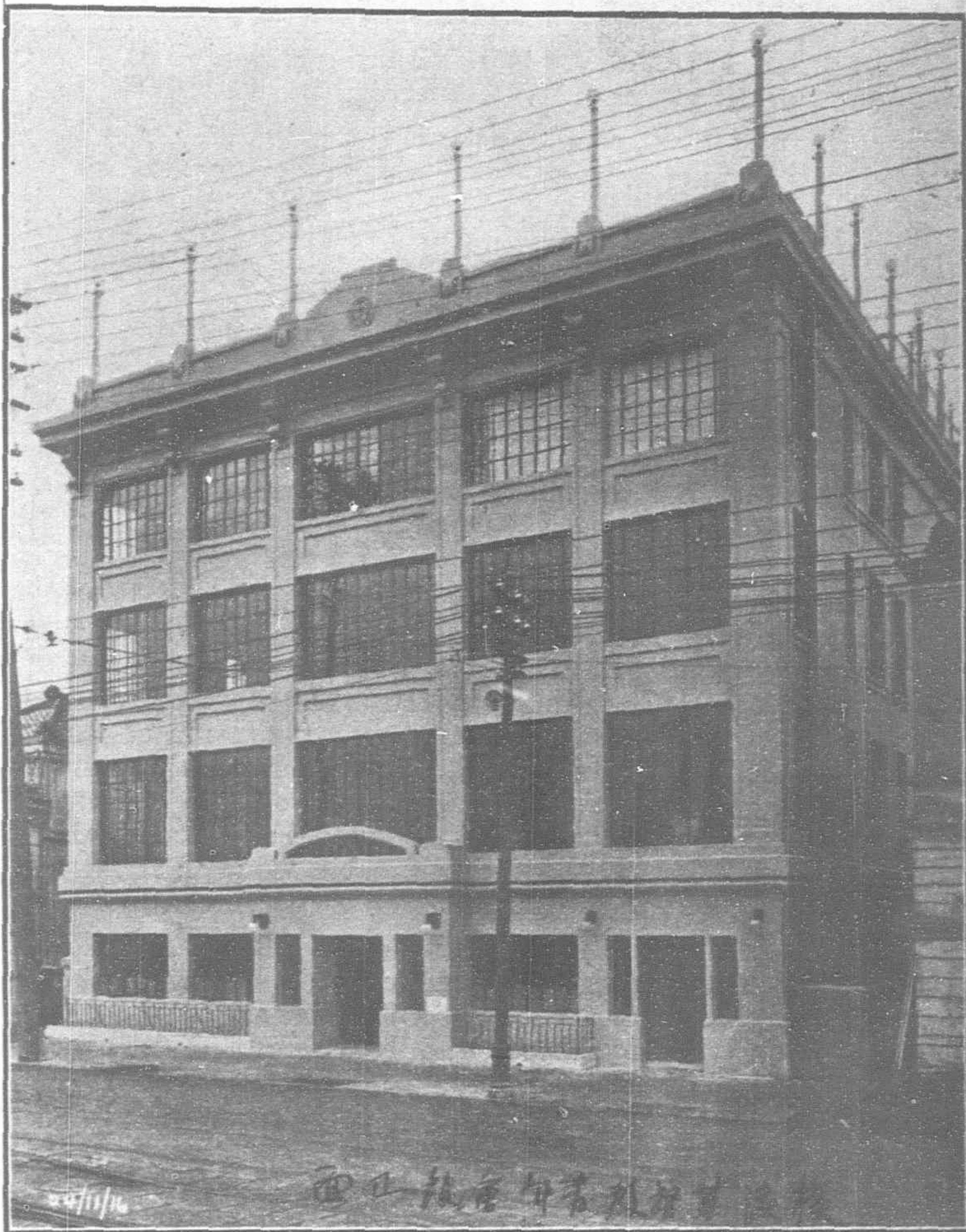
When the new buildings for the Yokohama branch of the Young Men's Christian Association were projected, the membership had outgrown the temporary quarters then occupied and it was expected that with the opening of the new building, a decided further increase would take place. At the time of the opening the rolls contained about 400 names. Less than seven months later, the membership has not only doubled, but almost trebled and the new building now is the headquarters for spiritual, mental and bodily advancement of more than 1,100 Japanese young men, all working loyally for a further extension of the association's activities.

The new building which was opened in October, is four stories in height and is built of reinforced concrete after designs by the Association's own architects. All the essential features of the Y. M. C. A. are included under the one roof, and some features not found in occidental buildings are provided. The first floor is given over to offices, the big dining room, while locker rooms and the baths take up the remainder of the space. On the second floor is a large and well lighted lounging room in which is a billiard table. Here is the general gathering place of the members. All the latest magazines are on file and writing tables provided with both Japanese and occidental materials are provided. One of the chief attractions is a player piano which is familiarizing the members with the music of the West.

The offices of the general secretary are on this floor where provision for two other offices also is made. In the rear of the lobby or lounging room is the gymnasium.

As in other association buildings, the gymnasium is taxed to its full capacity by the athletically inclined among the members, which class in Japan includes practically every one on the rolls. Here are held daily contests between teams at volley ball and basket ball, while the classes in physical training are well attended.

On the third floor is the room for meetings of the Board of Directors and a number of small rooms which can be thrown together for an assembly hall where moving pictures can be screened as a special provision has been made for this adjunct to educational work. The fourth floor is used for educational work and has 11 class-rooms, with one room furnished in Japanese fashion. The educational facilities of the association are already taxed to the full capacity and the night school also has gone far over the mark originally set as that at which best results could be obtained. Although less than one-third of the



EXTERIOR VIEW OF NEW Y.M.C.A. BUILDING AT YOKOHAMA

boys are from Christian homes, the chapel service held each evening is attended by a majority of the students so that this feature of the association's educational work has a great opportunity.



OPEN AIR MEETING ON ROOF



900 PRESENT AT SUNDAY SCHOOL RALLY ON ROOF PLAY GROUND



NOON-DAY VIEW OF LOBBY TWO MONTHS AFTER OPENING



A SOCIAL GATHERING AT THE SEASIDE OF MEMBERS AND FRIENDS

To supplement the regular curriculum, the Association has inaugurated a very helpful feature in the semi-monthly lecture course that is being given by some of the leading lecturers of Tokyo on character building subjects. These lectures are largely attended as are the educational entertainments at which the moving picture machine of the association is the central feature, films of every sort of modern endeavor being screened. These two special features give a variety to the regular work of the students and have been of considerable value in attracting new students to the various courses.

As regards the purely religious side of the Association's work, if any such segregation can be made, there have been organized five groups for the study of the Bible and keen interest has been manifested by those who have enrolled. This is supplemented by a weekly meeting held in the lobby of the building by General Secretary Omura which has proved a bright spot in the life of many a young man away from home. These meetings are held at 4 o'clock every Sunday afternoon and have proved a revelation to foreigners who have attended them to get an insight into the progress of Christian work among Japanese young men.

In addition to the association's work among the Japanese, it has also organized a gymnasium class for foreign businessmen in which more than 50 are now enrolled and during the winter season, especially, they found the gymnasium work of great benefit from the standpoint of health since its central location made it easily accessible to those who could not spare the time

for golf or other cold weather sports. Members of this class are so benefitted that they will permit no business or other engagement to interfere with their gymnasium hour. The association gymnasium also is used by a group of 30 boy scouts, an organization that is making a strong appeal to the youthful Japanese as well as to the foreign born boys in the community.

These are only a part of the activities of the 1,100 members of the Yokohama Y. M. C. A. who have made the new building the center of modern thought under Christian auspices. The membership comprises youths from many other cities than Yokohama and the influence of this institution will spread automatically to populous places where the Association work has not yet put its leaven into the youth of the community.

Although little is printed regarding the activities of the field secretaries of the Y.M.C.A. many are at work in Japan as in other countries of the Orient. They are earnest young men whose training in the work of the Association has been such as to make them competent to judge of the needs of the particular city or group of cities to which they are assigned. Their reports form the ground work on which the expansion of the Association's activities proceeds. Unfortunately this expansion is limited by the available funds and were it not for lack of money, the zeal of the field secretaries would have the Association established in every centre of population from the shore of the Japan Sea to the top of Thibet. As to the value of the work and the appreciation of the young men of the Orient, the rapid growth of the membership of Yokohama and every other Y.M.C.A. is sufficient proof.



A GROUP BIBLE CLASS



PHYSICAL DEPARTMENT BANQUET AT WHICH 96 WERE PRESENT

FOREIGN TRADE OF CHINA FOR 1916

[BY MR. F. E. TAYLOR, STATISTICAL SECRETARY, CHINESE MARITIME CUSTOMS]

The opening remarks of the Report on the Foreign Trade of China in 1915 apply with greater emphasis to the trade during 1916. Shortage of tonnage, high freights, increased cost of manufacture and scarcity of labour abroad, and consequent delays in delivery, all exercised a retarding influence on imports; while a great rise in the gold value of silver, added to the difficulty of finding cargo space for Europe, and certain restrictions regarding re-exports from Great Britain and other countries, interfered seriously with exports. Trade was also for a time hampered by a serious scarcity of silver, due to heavy shipments abroad. There was also considerable political unrest during the first half of the year, several provinces having declared themselves independent as a protest against the resumption of Monarchy. The movements of troops, involving the commandeering of vessels and other means of transport, obstructed the free transit of goods, while the disturbed state of the country in the districts affected by what was in effect a revolution against the Central Government caused great difficulty in bringing produce down to the ports and in sending silver to the interior to pay for it.

The death of President Yüan on the 6th June, and the peaceful succession of Vice-President Li Yüan-hung, were followed by more normal conditions. The rice crop seems to have been abundant everywhere, and the harvests of most other agricultural products are reported to have been favourable; so that it may be safely said that it was only due to the conditions brought about by the war that trade was not exceedingly flourishing. A very hopeful symptom is to be seen in the growth of all kinds of industries, and the statistics show that the competition of certain home-made articles, such as cotton goods and matches, is being more and more felt by importers.

In the Kwantung Leased Territory and elsewhere the Japanese have been showing a good example to the Chinese, and they are manufacturing dyes, sulphuric acid, compounds of barium, caustic soda, creosote, and other chemicals; while the Ceramic Department of the South Manchuria Railway's Central Laboratory is turning out bowls, teacups, etc., for which there is a good demand. They are also making hardened bean oil, to be used in the manufacture of soap, stearine, and glycerine. At Tsingtau they are erecting a cotton mill, as well as a flour mill and a leather factory, and a refrigerating plant for cold storage is in course of erection.

Chinese factories are increasing in number, and the formation of influential associations for the improvement of domestic products is a sign of the times, and there is every reason to hope that the energetic men who are responsible for their initiation will succeed in introducing improved methods that will largely increase the resources of the country. It is often said that China needs all her produce to support the huge population, and that there is but a small surplus available for foreign trade; but it is forgotten that, at present, production is kept down by the difficulty of reaching markets, which compels producers to restrict their output to the consumption of circumscribed areas.

China versus India

It was pointed out in the report on the trade of 1914 that the influence on trade of the few railways now in operation was already quite plain, and it is certain that, given an adequate railway system, practicable roads, and conserved waterways, the exports from China could be increased to an extent that is hardly realised. A comparison with India shows that in the year 1913-14 the value of the exports of

Indian produce and manufactures was £162,800,000, while in 1915, notwithstanding the war and the lack of tonnage and other hindrances, the value of Chinese produce exported was £54,321,000. India has a uniform currency, while in China the rates of exchange between different commercial centres are subject to violent fluctuations. India has no export duty or likin to hamper trade, and the movements of goods are facilitated by railways and good roads. In India the export trade and all industries are fostered by the Government: in China Government interference is confined to taxation. If the two countries were placed on an equal footing in the above respects, the export trade of China, which is now smaller than that of Japan, would show a wonderful expansion. To take a concrete instance of the possibilities of increasing the national wealth, the case of the cotton spinning and weaving industry may be usefully examined.

In the report written last year attention was called to the number of cotton spinning and weaving mills already established, and to the practical certainty that this industry will show rapid and extensive expansion. The Japanese are fully aware of what must come and intend to increase the number of their mills in China, from which important results are likely to follow. The only reason that Japan, a country where cotton is not grown, has been able to develop a huge industry, with which her cotton-producing neighbour has been unable to compete, is to be found in the difference between the fiscal systems of the two countries. In Japan every encouragement is given to this important trade, which is carefully fostered by Government: raw cotton is admitted duty free, and there are no duties on exports, while import duties on yarn and cotton goods protect the local industries against foreign competition. In China the policy is to derive what revenue can be levied and to abstain from all other interference.

China and Japan Cotton

The results can be shown both in the case of the finer and the coarser counts of cotton yarn. As Chinese cotton is of short staple and unsuitable for finer counts than 20's it is necessary, in order to spin finer counts, to import Indian or American cotton, which Japan imports duty free (as it also does Chinese cotton), shipping the manufactured yarn free of export duty, while China charges an import duty of Hk. Tls. 0.60 per picul on raw cotton and an excise of Hk. Tls. 0.70 per picul on the manufactured yarn. Allowing that 3.45 piculs of foreign cotton produce a 3-picul bale of yarn, such a bale spun in China has been taxed Hk. Tls. 4.17, while a similar bale spun in Japan pays, on importation into China, an import duty of Hk. Tls. 0.95 per picul, or Hk. Tls. 2.85 per bale.

Thus the spinners in China pay Hk. Tls. 1.32 more in taxation than their Japanese competitors. Turning now to coarser counts made entirely from Chinese cotton, there are likin and other charges to be paid by the cotton, and if it comes from another port through the Maritime Customs, it is subject to an export duty of Hk. Tls. 0.35 and a coast trade duty of Hk. Tls. 0.175 per picul, or a total of Customs duties of Hk. Tls. 0.525; while it pays only the export duty of Hk. Tls. 0.35 if shipped to Japan and has the further privilege of paying transit dues instead of likin. So that, so far as Customs taxation is concerned, the Japanese spinners obtain their raw cotton at least 17½ candareens cheaper than the Chinese mills can do, unless they confine their purchases to cotton grown in the immediate locality.

It is fortunate for Chinese mills that freight must be paid to and from Japan, though Gov-

ernment subsidies enable the shipping companies to charge such low rates that the advantage is not of much importance, the average freight from Japan to China on one bale having been Yen 1.10 (Hk. Tls. 0.714) during the year. In 1915 China exported 727,955 piculs of raw cotton, valued at Hk. Tls. 13,700,496, of which 551,322 piculs went to Japan, while 364,390 piculs were imported. In 1916 the figures were 851,037 piculs exported and 407,644 piculs imported. Unless the quality of Chinese cotton can be improved, the importations are likely to increase with the development of the spinning and weaving industries and the greater production of the finer counts. The value of the cotton yarn imported in 1915 was Hk. Tls. 67,116,297 and in 1916 Hk. Tls. 61,965,717, and it is reasonable to assume that the same development would gradually reduce these figures and eventually lead to an export trade in yarn. The manufacture of flannelette and cotton blankets has been commenced in China, but it has been found impossible to compete, with any prospect of success, with similar goods imported from Japan, the Chinese product being charged a 5 per cent. *ad valorem* duty under the provisions of the Treaty of 1858, while the Japanese goods are taxed under the Revised Import Tariff of 1902 and pay a specific duty that does not amount to as much as 5 per cent. Consequently the industry is being killed by taxation.

The crop of cotton in 1916 was good, and Chinese cotton was the cheapest to be found in the world. The cotton grown in Shensi, esteemed the best in China, is descended from American seed introduced by missionaries some years ago, but it is slightly yellow in colour and deteriorates from year to year unless fresh seed is imported. Mixed with Tungchow cotton, it can be spun into fairly good 20's. In Shantung there is a special grade much in demand in America for medicated cotton, as it is so white that it does not require bleaching. Some very interesting experiments in cotton-growing have been made in Shanghai, and it is to be hoped the results will be noted by Government. It has been shown that, although so far the climate appears unsuitable for American plants, which will not stand the moisture and are subject to the attacks of insect pests, improvement in cultivation and careful selection of seeds from indigenous plants can treble the crop without increasing the acreage under cultivation. Whereas a plant grown in the traditional way by the Chinese farmers yields locally an average of 5 bolls, the plants grown in the course of the experiments bore from 15 to 35 bolls, and the cotton was of superior quality.

Demand Exceeds Supply

Whatever quantity of cotton is produced there will always be a market for it, as the world's demand has overtaken the supply. When the mills were first started in China cotton was selling at Shanghai for Shanghai Tls. 12 per picul for the best quality, but, in sympathy with dearer cotton all over the world, the price has risen until it is well over Tls. 22. As cotton is sold by weight it was inevitable that its absorbent quality would be taken advantage of to adulterate it with water, and this practice was carried to such an extent that it was found necessary for the mills to combine for the purpose of checking it. A Cotton Testing House was established in 1911, and all cotton containing more than 15 per cent. of water is now rejected. In Tientsin it has been found possible to reduce the percentage to 10½, but in Shanghai, with a moister climate, a greater allowance has been found necessary. Among the samples passing through the Cotton Testing House 57 per cent. are

found to contain more than 12 per cent. and up to 15 per cent., which is the maximum allowed.

The natural moisture of Shanghai cotton is said to be approximately 11 per cent., and as for the purpose of ginning (extracting the seeds) the cotton has to be as dry as possible, to which end it is dried in the sun, the moist condition in which it reaches the mills is caused by subsequent adulteration. This is sometimes the work of thieves during transport, who make up, roughly, with water the weight of cotton they have abstracted from the bales; but the bulk of it is due to careless handling and exposure to rain or to deliberate watering. The natural moisture of Indian and American cotton is 8 per cent., and Shensi cotton is said to hold about 9 per cent. The practice of watering is very harmful, because the colour of the cotton rapidly deteriorates when excessive moisture is present, so that it reduces the demand for export and consequently lowers the price; while anything over 15 per cent. makes it useless for the mills. From this it is plain that the practice of watering is directly contrary to the interests of the grower. Northern cotton is not watered and fetches higher prices. A form of adulteration that is regarded by the mills as more harmful than watering, which can be tested for and guarded against, is throwing seed into the raw cotton. All that can be done in this case is to trust that the preliminary stage of manufacture—scutching—will eliminate the greater part, but there is a residue that becomes broken up and clings to the yarn and depreciates the value. These two practices should be suppressed by legislation.

Crop Now Two Million Bales

Last year the Ministry of Agriculture and Commerce was quoted as estimating the total yield of clean cotton at 1,630,500 piculs, but foreign experts are of opinion that 2 million bales of about 4 piculs each, or 8,000,000 piculs, is a conservative estimate of the Chinese crop. This would allow about 3 lb. per head of the population; and seeing the many purposes to which cotton is devoted in this country, wadding taking the place of wool for clothing and bed furniture, and cotton being used where Western countries employ other materials, this allowance appears reasonable. If this estimate is at all approximate, and assuming the average value throughout the country to be Tls. 10 per picul, trebling the crop would mean an addition to the national wealth of Tls. 160,000,000, not to speak of the immense impetus that would be given to the spinning and weaving industries or the saving effected by manufacturing at home instead of importing from abroad.

Experiments having proved that this trebling is attainable without any increase in acreage, it would appear that the suggestions lately put forward that experimental farms should be established in the various cotton-growing districts for the production and distribution of selected seeds, where students could be trained for the purposes of inspecting and giving advice and instruction to farmers, deserve the serious consideration of Government. If, in addition, the cotton industry were relieved from the taxation that at present hampers its expansion and prevents it from competing with Japan, capital would be readily forthcoming, and there is no reason why China should not eventually rival India as a producer of cotton and cotton goods.

The adoption of a more careful system of cultivation would, at the commencement, involve the farmers in some additional expenditure. The land would need more rest, it would have to be properly fertilised, and possibly improved implements would be found necessary. But any assistance the poorer farmers required could be easily supplied by the establishment of agricultural banks to advance money on the security of the crops: a system that has done immense service in India by rescuing the peasants from the clutches of money-lenders. The question of increasing one of the assets of the country is

of so much importance that no apology need be made for treating it at some length in a report that is translated and widely distributed among the officials.

Silk Industry in Danger

Another staple, the export of which might be easily doubled, is silk. For many years the Chinese have been urged to adopt scientific but simple measures for eradicating the disease that in many districts destroys a very large percentage of the worms before they reach the spinning stage and also affects the weight and quality of a large majority of the cocoons. It is a disappointing fact that the establishment of filatures run on European lines and the consequent increase in the demand for cocoons, leading to competitive buying between the filatures, has during late years brought about a rapid deterioration in the quality of the cocoons produced. The farmer having found that it is no longer necessary to spin silk, because his cocoons are eagerly bought up by the filatures, where the pupæ can be stifled and the cocoons reeled off as convenient, poor cocoons in consequence of competition fetching as good prices as healthy ones, has turned his attention to quantity at the expense of quality and neglected the ancient safeguards against disease.

Less care is now taken in selecting healthy cocoons for breeding purposes, the worms to reduce expense are given an insufficient supply of mulberry leaves, and sickly worms are allowed to survive among healthier companions in the hope that they may spin some sort of a cocoon that will go to make up weight. Finally, a most important point, the worms are given too short a time to spin the full weight and are collected prematurely, so that the cocoons have only about 60 per cent of their proper quantity of silk. Where the silk is still reeled on the farms, greater care is taken to keep the caterpillars healthy by the selection of the parent moths, to eliminate sickly worms, and to obtain the maximum quantity of silk from each cocoon by allowing the full six days for spinning. But the filatures demand more and more cocoons, and the search for them goes farther afield, with the result that the evils described above are spreading rapidly.

Efforts to Improve Silk

In 1889 Mr. Kleinwachter, at that time Commissioner of Customs in Ningpo, published a pamphlet in Chinese, the fruit of careful study, pointing out the injury disease was causing to the trade, explaining the Pasteur system of dealing with it, and urging the establishment of Government schools of sericulture for instruction and for distributing healthy eggs. Ten years later Mr. Rocher, then Commissioner of Customs at Shanghai, took similar steps, but without result. The establishment of the Republic has brought the mercantile classes into greater prominence and given them more influence, and there now seems some hope that this important matter will be seriously taken up. A copy of Mr. Kleinwachter's pamphlet has been recovered from obscurity and handed over to the Association for Fostering Native Products, by whom 5,000 copies have been immediately printed for distribution.

As a stimulus to action, the following striking contrast between the results obtained in Japan by careful furtherance of the trade, and the results in China of leaving everything to chance, has been presented to the same association. The values given in sterling have been converted from yen and Haikwan taels at the rates of exchange prevailing during the year concerned, and include the exports of both silk and silk products:

YEAR	CHINA	JAPAN
	£	£
1872.....	10,373,000	1,830,000

In 1883 a laboratory for the study of disease was opened in Tokio.

1894.....	6,818,000	5,900,000
1899.....	12,359,000	8,900,000
1905.....	10,588,000	11,600,000
1910.....	13,382,000	18,300,000
1911.....	12,453,000	18,140,000
1912.....	14,277,000	20,200,000
1913.....	15,840,000	25,300,000
1914.....	10,915,000	20,462,000
1915.....	13,072,000	20,425,000

Introduction of Pasteur system favourably considered by Hangchow government but obstructed by officials. In Japan the watering of silk was made punishable. Silk worm Diseases Act passed in Japan. Silk piece goods subject to Government supervision in Japan. New law in Japan for prevention of silk worm disease.

It will be observed that in 1872 the export from Japan was but little more than 17 per cent. of the value of the Chinese exports, but by 1905 the Japanese had forged ahead, and in 1913 (the last year before the great war) Chinese exports were worth only 63 per cent. of the Japanese trade. Further, it should be noticed that after the passing of the Silk-worm Diseases Act in 1905 the Japanese exports more than doubled in eight years. These results were obtained by legislation and education, and what Japan can do in the matter of silk China can surpass. There is no silk in the world equal in quality to that produced in the Wusih districts, and the hardy constitution of the Chinese worm has been proved by its survival under conditions that would have killed off a less robust race. The Japanese silk is inferior in tensile strength and durability, and could not compete on equal terms with healthy Chinese silk. But it must be remembered that for China success in competition is dependent on quality, since Japanese silk is assisted by the absence of likin and export duties. What is wanted is an educational propaganda, rules by the Silk Guilds, supported by Government, suppressing the evils described above, and establishments for the distribution of healthy eggs.

There is a school of sericulture near Hangchow, where instruction is given in the cultivation of mulberry trees and in the raising of silkworms and where healthy eggs are produced. But comparatively few of the farmers can be persuaded to take advantage of the opportunity, as the majority prefer to buy their eggs in the cheapest market and regard tradition as a safer guide than science, attributing their disappointments to any cause but the right one. Speculation in mulberry leaves should be discouraged, and steps should be taken to bring the quantities of worms hatched into some kind of relation with the amount of mulberry leaves available. That action is imperatively demanded is beyond dispute, and that the export trade could be easily doubled, in spite of the increased use of silk in China itself, is equally beyond question.

In support of this opinion it may be pointed out that in 1872 the export of raw silk amounted to 63,192 piculs and of wild silk to 2,148 piculs. In 1913 the figures were 119,344 piculs and 29,662 piculs; that is, in all 149,006 piculs in 1913, as against 149,006 in 1872. This advance has been made in the face of increasing disregard of all the precautions necessary for successful cultivation, so that it is quite justifiable to assume that the adoption of the Japanese policy would show remarkable results.

Anhui Tea Farm

It is interesting to record that the first batch of 39 packages of tea, grown on the Anhui Tea Planting Model Farm established by the Ministry of Agriculture and Commerce, passed

through Kiukiang to Hankow. This farm has been initiated as the commencement of a gradually extending reform in cultivation and manufacture, with the view of regaining some of the ground lost by the trade. The tea is reported to have been of good quality, but no details are yet available of the equipment and methods employed. It is probable that the introduction of scientific cultivation and the use of machinery would improve and cheapen the commoner kinds of tea, and in this way the export might be considerably increased; always provided that steps were taken to counterbalance the advantage possessed by Indian and Ceylon teas in the absence of taxation and cheaper freights.

Chinese tea contains less tannin than its rivals, and the finer sorts are unsurpassed in delicacy of flavour; but it is difficult to reform a vitiated palate, and those accustomed to the satisfying astringency of Indian teas will hardly be weaned from indulging in their indigestible luxury. Moreover, judging from the tea served in the houses of the majority of well-to-do foreign residents in China, where the preparation is often left to a native servant, the public in general regards a cup of tea simply as something wet and warm showing no discrimination between what is choice and what is unpalatable and exhibiting a hopeless indifference to quality. Under the circumstances, it seems impossible that Chinese teas will ever again hold the leading place in the markets of the world; but there is no doubt that the export of "teas for price" might be greatly stimulated.

The quarterly memoranda on trade received from the ports continue to show that in the demand for foreign goods and the supply of exports all the factors of an expanding commerce were present during the year but were checked chiefly by the disturbances due to war conditions. In the Manchuria districts trade with Russia was hampered by the fall in the rouble exchange, by the prohibition of exports from Russia and the high import duties levied on goods entering Russian territory, by the shortage of rolling-stock on the Chinese Eastern Railway system, and by low water and high freights on the Sungari; while a severely felt dearth of silver and of subsidiary silver coinage, added to the moratorium applied to the notes of the Bank of China and the Bank of Communications in May, increased the difficulties experienced by merchants. The harvests, however, were quite good, although unseasonable weather and the presence of an insect pest interfered with the spring crop of wild silk cocoons, which was short but of good quality. Unfortunately, the outturn of the autumn crop was also disappointing, and the total production was estimated at only about one-fourth of the yield in 1915.

Japanese Cotton Goods

The chief feature in imports was the enormous increase in Japanese products, especially cotton goods, which are ousting British and American makes. Cheap cotton underwear, of very inferior quality and finish, was in great demand. The importation of Japanese kerosene oil also increased. Among exports there were large increases in frozen meats, groundnuts, animal tallow, and eggs, while timber was in such demand owing to a shortness of supply from America that prices were about doubled, and many demands from South China and Singapore could not be met on account of high freights. The demand for wild silk and for cocoons was very brisk, but the high exchange made business with Japan difficult.

Large quantities of bean oil were shipped to Europe and America, and the price rose 50 per cent. partly because this oil was in demand for replacing kerosene, the price of which had made it too dear for general Chinese consumption. The flour mills were very active. A shipping combine, known as the "Amurski Flott," acquired the ownership of almost all the Russian steamers plying on the Sungari and Amur Rivers, and the result of

the combination under one management was a regular and reliable service.

At Hunchun there was noticed during the June quarter a remarkable increase in the importation of alcohol and tin sheets, and inquiries led to the discovery of a most lucrative smuggling traffic across the frontier into Russian territory, rendered easy by the withdrawal of the greater part of the Russian frontier posts. The tin sheets were used for making flat flasks, four of which could be concealed under the clothes of a smuggler. This traffic was said to give a profit of 180 per cent. The Chinese authorities, in accordance with a Chinese-Russian mutual agreement concerning the restriction of the movements of opium and alcohol, did their best to stop the smuggling, and the Japanese and Korean authorities, although the Japanese Government was not a party to the agreement, evidently quietly discouraged the traffic, for by the end of December it appears to have ceased.

Foreign matches are giving way in the competition with those made in China. It was noted that the high steamer freights from Japan led to an increase of imports through the parcel post. The first appearance of produce from the Tienpaoshan copper mine is reported from Lungchingtsun. It passed through in the form of large moulds of roughly separated metal, mostly composed of copper, but mixed with other metals. The Penchiu Coal and Iron Mining Company, with a view to doubling its output of iron, has increased its capital from 5.15 millions of yen to 8.65 millions, and new smelting furnaces are in course of construction. A company has been formed for opening up the Anshanchan iron mines, south of Liaoyang. Another company has been formed with a capital of 10 millions of yen to establish a refinery—probably near Fushun—to make sugar from beets grown locally and to refine crude sugar from Java.

From the northern ports good crops were reported, but all have the same complaints to make of the scarcity of silver, violent fluctuations in Chinese exchanges, high freights, and lack of tonnage.

Trade on the Upper Yangtze was greatly interfered with by political disturbances and by the commandeering of vessels and other transport for the movement of troops. The rice crops were good, and trade should have been flourishing. The same complaints were made of scarcity of silver and violent fluctuations in exchange. There was a great deal of piracy on the river between Ichang and Chungking, and several vessels were attacked and looted, while roving bands of robbers are committing depredations in the interior. In Shasi the dearth of kerosene is assisting the spread of electric lighting. Changsha reports the appearance of wolfram ore, containing only a moderate percentage of tungsten but so easy to work, in the absence of traces of tin and copper, that the export is likely to develop. Antimony fell greatly in price during the course of the year, from Tls. 550 in the March quarter to Tls. 115 by August, rising again to Tls. 180 by the end of the year.

The demand for wood oil for America is growing. Chinese yarn, cigarettes, and matches are competing successfully with those imported, and Japanese cotton goods are pushing out British makes. Japanese electrical materials are being imported in considerable quantities. Railway progress was checked through want of funds. It is reported that the likin collected on the Shanghai Nanking-Tsinanfu Railways amounts to \$20 per ton, or twice as much as the charge for freight. No piece goods can afford to travel by this route.

Passing to the more southern ports, we find very little variation from the conditions mentioned already. Points of interest were that the unsettled condition caused by political troubles promoted the coolie emigration from Amoy, and that the demand for silver in Shanghai made the cost of drafts prohibitive and led to heavy shipments of the metal. In Canton the products of the local factories—

cotton singlets and drawers, as well as hosiery—are firmly established in the public favour. Silk socks, cool and of reasonable durability, can be bought for 80 cents, while cotton socks cost but 20 cents. The production of various ores is increasing, but there is some difficulty in disposing of them, because smelters in New York and London will pay only on the result of the outturn, as the ores cannot be satisfactorily purchased under a guarantee of percentage even after analysis, which has proved to be too risky in China, one sample giving quite good results while another will be inferior. The Japanese smelters, however, do not appear to be so particular and are willing to take risks, exporters buying without even a guarantee. Samshui reports the erection of works for the production of antimony regulus; Kiungchow, the export of magnetite ore; and Pakhoi, the export of manganese ore. In Mentsz the price of antimony had fallen considerably. A Japanese Consulate was opened at Yunnanfu in June. An American scientific party sent out by the New York Natural History Museum to carry out research work on the Tibetan frontier passed through Mengtsz during the December quarter. Since the arrival of the railway Mengtsz has become very progressive, and a scheme for waterworks is under way, while electric light has been installed, a steam-roller has been purchased to improve the roads, and a steam fire-engine is ready to cope with fires. All this sounds somewhat incongruous with the report that the routes are unsafe owing to large bands of armed robbers.

The total collection during 1916 was Hk. Tls. 37,764,311, an increase of Hk. Tls. 1,016,605 as compared with that for 1915. In import duties there was an increase of Hk. Tls. 1,118,630 and in export duties an increase of Hk. Tls. 1,102,905. But coast trade duties were less by Hk. Tls. 118,307; transit dues, by Hk. Tls. 101,659; and tonnage dues, by Hk. Tls. 72,068. Opium duty decreased by Hk. Tls. 260,796, and opium likin, by Hk. Tls. 652,100. These figures may, under the abnormal circumstances prevailing, be regarded as eminently satisfactory.

Foreign Trade

The value of the direct foreign trade was Hk. Tls. 998,204,361—the highest on record and Hk. Tls. 124,867,478 above the figure for 1915. To this increase imports contributed Hk. Tls. 61,931,276 and exports Hk. Tls. 62,936,202. But imports were still nearly 54 millions below 1913, and their greater cost in gold, due to shortage of labour and high freight and insurance, prohibits the inference that the increased value as compared with 1915 necessarily points to a corresponding expansion in the volume of trade, although the rise in the gold value of silver was of service in easing off silver prices. On the other hand, the fact that exports, notwithstanding the high exchange, heavy freights, and an embarrassing lack of cargo space, rose to a value exceeding all previous records by nearly 63 millions and doubled the figures for 1906 shows that the return of normal conditions will be accompanied by a great expansion of trade.

The silver value of the cotton goods imported again fell from Hk. Tls. 150,004,310 to Hk. Tls. 136,679,386, but the average rate of the exchange during the year having been 3s. 3½d., as against 2s. 7½d. in 1915, the sterling value rose from £19,453,671 to £22,672,116. Turning to quantities, we find a serious falling off in American and British piece goods. Japanese shirtings, jeans, and T-cloths increased considerably; but Japanese sheetings, drills, and cotton cloths appear to have felt the competition of the Chinese mills. Fancy muslins, plain cotton prints (especially Russian), turkey reds, yarn-dyed cottons, crimps and crepons, velveteens, Japanese cotton blankets, handkerchiefs, and towels all improved. Indian yarn lost about 100,000 piculs, and Japanese yarn lost a similar amount. Woollen and cotton mixtures were in greater demand, and the trade in woollens was brisk; the

import of gunny and hessian cloth was more than doubled. Metals showed a considerable increase over the figures for 1915. Among sundries may be noted buttons, cigarettes, coffee, window glass, hosiery, machinery, vegetable oils, paper, railway materials, electrical appliances, sugar, timber (softwood), and tobacco as having been purchased in larger quantities.

American kerosene oil receded to 108 million gallons from 128 millions in 1915; Borneo, to 10 millions from 23 millions; and Sumatra, to 19 millions from 30 millions. On the other hand, Japanese kerosene rose from 1,226,263 to 6,406,400 gallons; Russian, from 857,155 to 1,047,372 gallons; and other kinds, from 10,800 to 1,509,383 gallons. The net decrease was 37.7 million gallons, caused by the high cost due to heavy rates of freight which made kerosene (except the inferior oil from Japan) too dear in comparison with native illuminants such as bean oil. No aniline dyes or artificial indigo were imported, and, as a consequence, sapan-wood more than doubled in quantity.

Electrical materials and machinery are wanted in increasing quantities every year, as are also photographic materials, printing and lithographic materials, railway materials, safes, soap, motor cars and cycles bicycles, and wines and spirits—a fair indication of the spirit of progress.

Chinese Products in Demand

Chinese woven sheetings, drills, and nan-keens showed satisfactory progress and are evidently finding an extending market. There was a decrease of about 20,000 piculs in the quantity of antimony exported, but the gain in value amounted to over 7 millions of taels, and more than six times as much antimony ore was sent away as compared with the exports in 1915. Copper rose from 45,000 to 564,000 piculs. Iron ore was less in quantity but higher in value. Lead and lead ore, quicksilver, and various unclassified minerals and ores were exported in greater quantities. White alum was in good demand. Egg Albumen and yolk as well as eggs, hemp fibres, flour (especially wheat), dried fruits, lard, meats, bean oil, wood oil, skins and hides, straw braid, tallow, timber (softwood), and wax showed improved demand. Shelled groundnuts are gradually taking the place of the unshelled, the gain in freight being considerable. There was a reduced export of beans and cereals. Sesamum seed showed a heavy falling off, the exports to Holland having been curtailed. Wood oil was in much greater demand, principally for America, and the export rose from 310,000 to 515,000 piculs.

As regards silk, the total exports of raw silk were 5,532 piculs less than in 1915. Re-reels fell off by 10,568 piculs, while steam filatures gained 5,147 piculs. Wild silks showed an export of only 18,682 piculs, as against 34,004 piculs in the previous year, but waste silk improved by 21,287 piculs. The crops of wild silk cocoons, both in the spring, when the worms are chiefly reared for seed, and in the autumn, when the principal bulk of the season's production is gathered, were abnormally small in Manchuria. The export of native re-reels is dwindling, as nearly all this silk is used up in the manufacture of pongees. But for tussore filatures there was a larger demand from America than could be satisfied, and prices ruled very high with every prospect of going still higher. This branch of the trade is expanding rapidly. In 1914 the export was only 103 piculs, in 1915 it had risen to 24,225 piculs, and in 1916 it was 13,165 piculs.

There is a good demand for wild waste silk, but the adulteration has become quite scandalous. Whereas 17 per cent. is a fair allowance for extraneous matter, samples are now found to contain as much as 55 per cent, of which 38 per cent. has been deliberately introduced. In the Shanghai market the demand for white steam filatures was quite good throughout the year, and prices were high, rising at one time to Shanghai Tls. 1,200 per picul. America and France were the chief buyers. White re-reels

were also bought freely by America, and a very short crop enabled dealers to keep up the silver price in spite of the great rise in exchange. The quality of the cocoons showed a serious falling off as compared with that of the previous year. Yellow silks are chiefly produced in the provinces of Szechwan and Hupeh, and India is the principal buyer, except in the form of steam filatures, when they go to France. This latter branch of the trade appears to have a bright future.

In Canton the year opened with an active demand from Europe and America and higher prices prevailed, about the middle of April the trade was brought practically to a standstill by the disturbances due to the participation of the Kwangtung province in the resistance to the monarchical movement, and it was not until August that conditions became sufficiently tranquil to allow the trade to resume its normal aspect. In May the Hongkong Government prohibited the export of waste and raw silk to Europe and America, which caused a sharp drop in values; but the prohibition was subsequently withdrawn. During June a fair business was done at improved prices, but in July political troubles again caused the market to be suspended, and the trade was subject to fluctuations throughout the remainder of the year. There was difficulty in bringing the silk down from the interior and in sending money to pay for it.

It was predicted in the report written last year that the Chinese teamen were likely to be disappointed in their expectations of repeating the profits they made in 1915. Without understanding that the rise in the gold value of silver and very high freights to Europe made buying for London at the prices paid during the previous year absolutely out of the question, they competed amongst themselves in the producing districts, and the tea was brought into Hankow at prices that were prohibitive and had to be reduced by over 30 per cent. before buyers could contemplate business. The weather had been exceptionally wet during April and May, and the leaf was overgrown, while a want of sunshine prevented the leaves from being properly dried, and they arrived in Hankow moist and in some cases spoiled. Generally speaking, the quality was inferior and the trade disappointing.

The results to the Chinese teamen were disastrous, and they are said to have lost in Hankow about Tls. 2,000,000. The fall in the value of the rouble hampered buying for Russia, but there was so much demand that the Russian business did much to help the trade, the London demand being very weak, partly due to restrictions on re-export. Freight to London was 134s. per ton. The result was that Common teas that fetched Tls. 33 to Tls. 35 in 1915 were procurable for Tls. 18 to Tls. 20, while Oanfa and Hankow district teas were bought for Tls. 23 to Tls. 27, or Tls. 20 less than in 1915. Most of the first crop was bought for Russia at prices that were prohibitive for London, but the losses incurred by the teamen made them curtail their purchases of the second and third crops, which were finally taken for Russia at prices that were not warranted by the quality. The same remarks apply to the Foochow market, where the teamen made the same mistake and where quality was also inferior.

Fortunately, in the latter half of the September quarter there was a revival of demand, and more tea was sent to Russia than in 1915. The large demand from Russia for China teas was due to the closing of the Black Sea, which prevents Indian and Ceylon teas from reaching Odessa, and compels them to travel via Vladivostok and the Siberian Railway, making them too expensive to compete with the China teas. The British embargo on re-export to Holland cut off the export of souchong to that country and thence to Germany, where this class of tea was mostly consumed. The trade in green teas was, on the other hand, more favourable to Chinese dealers.

America still prefers Chinese and Japanese teas to Indian and Ceylon, and there was a

good demand for Morocco and Central Asia, although the demand for Persia was weaker. Prices advanced all round, and quality was satisfactory. The exports were, as compared with those in 1915:—

	1915. Piculs.	1916. Piculs.
Black tea	771,141	648,228
Green tea	306,324	298,728
Brick tea	641,318	560,185
Tablet	30,712	26,669

The shortage of tonnage experienced in 1915 was still more severely felt during 1916, the principal causes being the requisitioning of vessels by the belligerent Governments and the absence of German shipping. Freights in all directions were very high, the minimum rise in rates to Europe being 25 per cent. Some conference lines raised their rates considerably higher and practically auctioned their space to the highest bidder. Except for a short period during the summer, when cargo for the Pacific was more than provided for, tonnages for both Europe and America was far short of the demand, and trade was very adversely affected. As compared with 1915, there was a total falling off of tonnage, including all Chinese vessels, of 2,642,904 tons, of which foreign shipping was responsible for 1,881,004 tons and Chinese for 761,900 tons. British tonnage was less by 1,835,000 tons and Russian by 377,000 tons. The American, Dutch, Norwegian, and Portuguese flags showed small losses, while the Japanese gained 360,000 tons. The steam traffic between Ichang and Chungking has proved so profitable that additional vessels are being built for this trade.

Owing to political unrest in China, and also to a very general desire on the part of the Chinese to speculate in gold while exchange was so high, great quantities of silver were sent from the provinces to Shanghai, and the exchange banks, to cover the purchases of gold and assisted by the exchange, which was below the parity of silver, exported sycee and dollars in large quantities. Foreigners also remitted freely for investment in war loans and in the way of subscriptions to war funds. Much silver is reported to have been sent from Yunnan to Burma for safekeeping during the political disturbances in that province. The result was a scarcity of silver that was felt everywhere, from north to south and from east to west. The restriction of credits caused great inconvenience to merchants, and all silver securities fell in value.

Everywhere money was tight, and a deficiency of subsidiary coinage was complained of, the situation being aggravated by the melting down of brass coins for export in the form of ingots. Over 33,000 tons of copper ingots were shipped away from Kiaochow, where there were 27 smelting establishments. The scarcity of silver caused abnormal fluctuations in the exchange rates between different commercial centres and made trade difficult. Bank-notes, silver dollars, subsidiary silver coins, and copper coins were all subject to violently shifting comparisons of value. Chinese emigrants abroad reduced their remittances to the lowest figures, and Chinese merchants in the Straits, with whom a large proportion of the trade of the Kwangtung ports is done, were reluctant to turn their gold into silver.

In May the Government ordered the Bank of China and the Bank of Communications to suspend all cash payments, either in the way of cashing their notes or of cashing cheques on deposits, at the same time threatening with punishment anyone refusing to accept the notes of the two banks or disposing of them at a discount. The Shanghai branch of the Bank of China refused to obey the Mandate and, with the aid of the foreign banks, was able to sustain the run that ensued and to allay the panic, thus averting a very serious financial crisis. But the Bank of Communications was compelled to close its doors and has not yet reopened.